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=> d his full

     FILE 'REGISTRY' ENTERED AT 16:02:21 ON 31 JAN 2006
L5        190619 SEA ABB=ON  PLU=ON  PES/PCT
L6             1 SEA ABB=ON  PLU=ON  24968-12-5/RN
L7             1 SEA ABB=ON  PLU=ON  25038-59-9/RN
L8             1 SEA ABB=ON  PLU=ON  24937-79-9/RN
L9             1 SEA ABB=ON  PLU=ON  9002-84-0/RN
L10       118223 SEA ABB=ON  PLU=ON  PSTY/PCT
L11            1 SEA ABB=ON  PLU=ON  25014-41-9/RN
L12            1 SEA ABB=ON  PLU=ON  9002-86-2/RN
L13        10494 SEA ABB=ON  PLU=ON  FLPO/PCT
L14       317979 SEA ABB=ON  PLU=ON  PACR/PCT
L15       175997 SEA ABB=ON  PLU=ON  PVIN/PCT
L16        12329 SEA ABB=ON  PLU=ON  PACT/PCT
L17          743 SEA ABB=ON  PLU=ON  PPH/PCT
L18        34477 SEA ABB=ON  PLU=ON  POLF/PCT
L19        84181 SEA ABB=ON  PLU=ON  PA/PCT
L20       317979 SEA ABB=ON  PLU=ON  PACR/PCT
L21        18400 SEA ABB=ON  PLU=ON  PC/PCT
L22            1 SEA ABB=ON  PLU=ON  30604-81-0/RN
L23            1 SEA ABB=ON  PLU=ON  25233-30-1/RN
L24            1 SEA ABB=ON  PLU=ON  25233-34-5/RN
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L27            1 SEA ABB=ON  PLU=ON  28774-98-3/RN
L28       190619 SEA ABB=ON  PLU=ON  L5 OR L5
                 D RN 95000
L29        95620 SEA RAN=(,153511-12-7) ABB=ON  PLU=ON  L5 OR L5
L30        94999 SEA ABB=ON  PLU=ON  L28 NOT L29
L31       317979 SEA ABB=ON  PLU=ON  L14 OR L14
                 D RN 150000
L32       167980 SEA RAN=(,164386-28-1) ABB=ON  PLU=ON  L14 OR L14
L33       149999 SEA ABB=ON  PLU=ON  L31 NOT L32

     FILE 'HCAPLUS' ENTERED AT 16:47:49 ON 31 JAN 2006
L34        15181 SEA ABB=ON  PLU=ON  L6
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L36       286466 SEA ABB=ON  PLU=ON  L29
L37        40975 SEA ABB=ON  PLU=ON  L30
L38       313370 SEA ABB=ON  PLU=ON  L34 OR L35 OR L36 OR L37
L39        15663 SEA ABB=ON  PLU=ON  L8
L40        45337 SEA ABB=ON  PLU=ON  L9
L41       318695 SEA ABB=ON  PLU=ON  L10
L42        15751 SEA ABB=ON  PLU=ON  L11
L43        97192 SEA ABB=ON  PLU=ON  L12
L44        80588 SEA ABB=ON  PLU=ON  L13
L45       477777 SEA ABB=ON  PLU=ON  L39 OR L40 OR L41 OR L42 OR L43 OR
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L46       492088 SEA ABB=ON  PLU=ON  L15
L47        17406 SEA ABB=ON  PLU=ON  L16
L48         4384 SEA ABB=ON  PLU=ON  L17
L49       472267 SEA ABB=ON  PLU=ON  L18
L50       134310 SEA ABB=ON  PLU=ON  L19
L51        28572 SEA ABB=ON  PLU=ON  L21
L52         9701 SEA ABB=ON  PLU=ON  L22
L53        10263 SEA ABB=ON  PLU=ON  L23
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L55          124 SEA ABB=ON  PLU=ON  L25
L56           49 SEA ABB=ON  PLU=ON  L26
L57           20 SEA ABB=ON  PLU=ON  L27
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L58      398325 SEA ABB=ON  PLU=ON  L32
L59       62338 SEA ABB=ON  PLU=ON  L33
L60     1180746 SEA ABB=ON  PLU=ON  L46 OR L47 OR L48 OR L49 OR L50 OR
               L51 OR L52 OR L53 OR L54 OR L55 OR L56 OR L57 OR L58 OR
               L59
L61      162691 SEA ABB=ON  PLU=ON  ANODE# OR NEGATIVE (2A) ELECTRODE#
L62      130062 SEA ABB=ON  PLU=ON  BATTERY OR BATTERIES
L63     1994611 SEA ABB=ON  PLU=ON  FILM# OR COAT?
L64     1054929 SEA ABB=ON  PLU=ON  SUBSTRATE#
L65          38 SEA ABB=ON  PLU=ON  L38 AND L61 AND L62 AND L63 AND L64
L66           1 SEA ABB=ON  PLU=ON  L38 AND L61 AND L62 AND L63 AND L64
               AND ROUGH?
L67          18 SEA ABB=ON  PLU=ON  L38 AND L61 AND L62 AND L63 AND L64
               AND METAL#
L68          18 SEA ABB=ON  PLU=ON  L38 AND L61 AND L62 AND L63 AND L64
               AND METAL# AND ELECTROCHEM?/SC
L69           1 SEA ABB=ON  PLU=ON  2004:353018/AN
L70           1 SEA ABB=ON  PLU=ON  L69 AND L68
L71          17 SEA ABB=ON  PLU=ON  L68 AND (1840-2002)/PRY,PY
L72          17 SEA ABB=ON  PLU=ON  L71 OR L66
L73         104 SEA ABB=ON  PLU=ON  L45 AND L61 AND L62 AND L63 AND L64
L74           2 SEA ABB=ON  PLU=ON  L45 AND L61 AND L62 AND L63 AND L64
               AND ROUGH?
L75          36 SEA ABB=ON  PLU=ON  L45 AND L61 AND L62 AND L63 AND L64
               AND METAL#
L76          36 SEA ABB=ON  PLU=ON  L45 AND L61 AND L62 AND L63 AND L64
               AND METAL# AND ELECTROCHEM?/SC
L77          32 SEA ABB=ON  PLU=ON  L76 AND (1840-2002)/PRY,PY
L78          33 SEA ABB=ON  PLU=ON  L74 OR L77
L79         192 SEA ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63 AND L64
L80           2 SEA ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63 AND L64
               AND ROUGH?
L81          68 SEA ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63 AND L64
               AND METAL#
L82          67 SEA ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63 AND L64
               AND METAL# AND ELECTRO?/SC
L83          46 SEA ABB=ON  PLU=ON  L60 AND L61 AND L62 AND L63 AND L64
               AND METAL# AND ELECTRO?/SC AND SECONDARY
L84          41 SEA ABB=ON  PLU=ON  L83 AND (1840-2002)/PRY,PY
L85          23 SEA ABB=ON  PLU=ON  L78 NOT L72
L86          10 SEA ABB=ON  PLU=ON  L78 NOT L85
L87          17 SEA ABB=ON  PLU=ON  L72 OR L86
L88          17 SEA ABB=ON  PLU=ON  L83 NOT (L87 OR L85)


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FILE 'REGISTRY' ENTERED AT 17:37:06 ON 31 JAN 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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=> d l87 que stat
L5       190619 SEA FILE=REGISTRY ABB=ON  PLU=ON  PES/PCT
L6            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  24968-12-5/RN
L7            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25038-59-9/RN
L8            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  24937-79-9/RN
L9            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-84-0/RN
L10      118223 SEA FILE=REGISTRY ABB=ON  PLU=ON  PSTY/PCT
L11           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25014-41-9/RN
L12           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-86-2/RN
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L13       10494 SEA FILE=REGISTRY ABB=ON  PLU=ON  FLPO/PCT
L28      190619 SEA FILE=REGISTRY ABB=ON  PLU=ON  L5 OR L5
L29       95620 SEA FILE=REGISTRY RAN=(,153511-12-7) ABB=ON  PLU=ON  L5
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L30       94999 SEA FILE=REGISTRY ABB=ON  PLU=ON  L28 NOT L29
L34       15181 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L6
L35       76100 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L7
L36      286466 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L29
L37       40975 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L30
L38      313370 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L34 OR L35 OR L36 OR
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L39       15663 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L8
L40       45337 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9
L41      318695 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10
L42       15751 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L11
L43       97192 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L12
L44       80588 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L13
L45      477777 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L39 OR L40 OR L41 OR
                L42 OR L43 OR L44
L61      162691 SEA FILE=HCAPLUS ABB=ON  PLU=ON  ANODE# OR NEGATIVE (2A)
                ELECTRODE#
L62      130062 SEA FILE=HCAPLUS ABB=ON  PLU=ON  BATTERY OR BATTERIES
L63     1994611 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FILM# OR COAT?
L64     1054929 SEA FILE=HCAPLUS ABB=ON  PLU=ON  SUBSTRATE#
L66           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L61 AND L62 AND
                L63 AND L64 AND ROUGH?
L68          18 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L61 AND L62 AND
                L63 AND L64 AND METAL# AND ELECTROCHEM?/SC
L71          17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L68 AND (1840-2002)/PRY,
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L72          17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L71 OR L66
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L77          32 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND (1840-2002)/PRY,
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L78          33 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 OR L77
L85          23 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 NOT L72
L86          10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 NOT L85
L87          17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 OR L86


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=> d l87 1-17 ibib abs hitstr hitind

L87  ANSWER 1 OF 17  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:972694  HCAPLUS
DOCUMENT NUMBER:          142:180408
TITLE:                    Composite polymer electrolyte, lithium secondary
                          battery comprising the same and
                          fabrication methods thereof
INVENTOR(S):              Cho, Byeong Won; Cho, Seong Mu; Cho, Won Il;
                          Choi, Seong Won; Chun, Seok Won; Kim, Hyeong
                          Seon; Kim, Un Seok; Ko, Seok Gu; Lee, Hwa Seop;
                          Park, Geon Yu; Yoon, Gyeong Seok
```

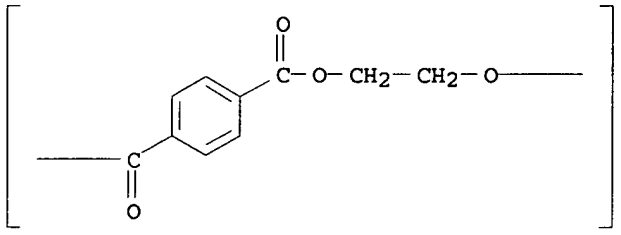
PATENT ASSIGNEE(S): Korea Institute of Science and Technology, S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2003019385	A	20030306	KR 2002-715454	200211 15
			<--	
PRIORITY APPLN. INFO.:			KR 2002-715454	200211 15
			<--	

AB Provided are a novel composite polymer electrolyte, a lithium secondary **battery** comprising the composite polymer electrolyte and their fabrication methods. The composite polymer electrolyte has improved adhesion with electrodes, good mech. strength, improved performance at low and high temps., improved compatibility with org. electrolytes of lithium secondary **battery** and it can be applied to the manuf. of lithium secondary **batteries.** The composite polymer electrolyte comprises super fine fibrous porous polymer electrolyte matrix with particles having diam. of 1 - 3000 nm, polymers and lithium salt-dissolved org. electrolyte solns. incorporated into the porous polymer electrolyte matrix. The fabrication method of the composite polymer electrolyte comprises the steps of: obtaining two or more polymeric solns. by dissolving two or more polymers which can be formed into fibers in a mixt. of a plasticizer and an org. solvent resp.; filling the obtained polymeric solns. into different barrels of an electrospinning app. resp. and then discharging the polymeric solns. onto a **substrate** including a **metal** plate, a Mylar **film** and electrodes with different nozzles charged with a high voltage, to generate polymer electrolyte matrixes in a state that the two or more polymer fibers are entangled with each other resp.; and injecting a polymer electrolyte soln. contg. a polymer and an org. electrolyte soln. into the polymer electrolyte matrixes. The lithium secondary **battery** comprises the composite polymer electrolyte and its fabrication method comprises the steps of: inserting the composite polymer electrolyte between an **anode** and a cathode; inserting the resulting plate into a **battery** casing after laminating or rolling it; injecting an org. electrolyte soln. into the **battery** casing; and sealing the casing.

IT **25038-59-9**, Mylar, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**substrate**; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)

RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 37, 38
ST composite polymer electrolyte lithium secondary **battery** comprising fabrication
IT **Battery** electrolytes
Nozzles
(composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Synthetic polymeric fibers, uses
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Polyesters, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Synthetic fibers
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(electrospun; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Secondary **batteries**
(lithium; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT **Metals**, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(plate, **substrate**; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Polymer electrolytes
(porous; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT Fibers
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(spinning, electrospinning; composite polymer electrolyte lithium secondary **battery** comprising same and fabrication methods thereof)
IT **25038-59-9**, Mylar, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**substrate**; composite polymer electrolyte lithium

secondary **battery** comprising same and fabrication methods thereof)

L87 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:569727 HCAPLUS
DOCUMENT NUMBER: 141:108929
TITLE: Method of fabrication of lithium ion **battery**
INVENTOR(S): Munshi, M. Zafar A.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 20 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004137326	A1	20040715	US 2003-703178	20031105
			<--	
WO 2005048394	A1	20050526	WO 2004-US12842	20040426

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.:		
US 2002-424932P	P	20021109
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US 2003-703178	A	20031105

AB A lithium ion **battery** includes an **anode**, a cathode, and an electrolyte between the two. When the **battery** is in its initial charged state, as it is upon exiting the manufg. process, the **anode** is composed of a first portion of lithium-deficient electrode material, and a second portion of lithium-rich or lithium-intercalated material **coated** on at least a part of the surface of the first portion. The cathode is composed of lithium-deficient material adapted to react reversibly with lithium ions from the lithium-rich second portion of the **anode** during subsequent discharge of the **battery** from its initial charged state as the second portion becomes fully consumed. During each subsequent charge-discharge reaction cycle, free lithium ions from the cathode are inserted into the lattice structure of the solely remaining first portion of the **anode** to render it lithium-rich in

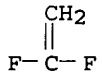
the charged state, without plating lithium **metal** onto the **anode**, and lithium ions from the **anode** are re-inserted into the lattice structure of the cathode to render it lithium-rich in the discharged state. Methods of manuf. are described.

IT **24937-79-9**, Pvdf **24968-11-4**, Poly(ethylene naphthalate) **25038-59-9**, Polyethylene terephthalate, uses **25230-87-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(metalized, **substrate**; method of fabrication of lithium ion **battery**)

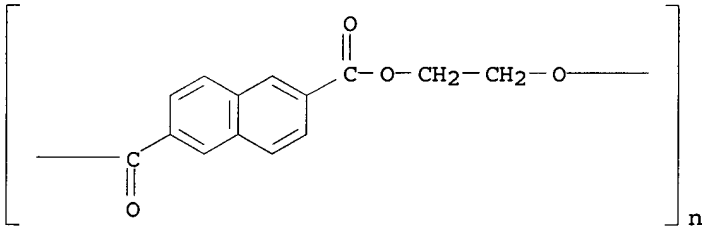
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

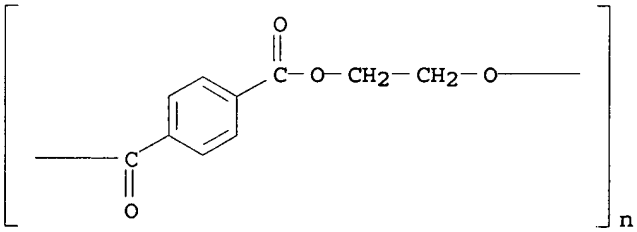
CRN 75-38-7
CMF C2 H2 F2



RN 24968-11-4 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-2,6-naphthalenediylcarbonyl) (9CI) (CA INDEX NAME)



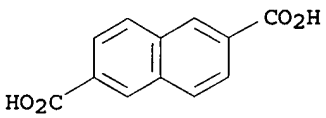
RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25230-87-9 HCAPLUS
CN 2,6-Naphthalenedicarboxylic acid, polymer with 1,2-ethanediol (9CI) (CA INDEX NAME)

CM 1

CRN 1141-38-4
CMF C12 H8 O4



CM 2

CRN 107-21-1
CMF C2 H6 O2

HO— CH_2— CH_2— OH

IC ICM H01M004-58
ICS H01M004-52; H01M004-50; H01M004-60; H01M004-04
INCL 429231400; 429231800; 429224000; 429231100; 429231500; 429223000; 429213000; 029623100
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium ion **battery** fabrication method
IT Secondary **batteries**
(lithium; method of fabrication of lithium ion **battery**)
IT Fluoropolymers, uses
Plastics, uses
Polyesters, uses
Polythiophenylenes
RL: TEM (Technical or engineered material use); USES (Uses)
(metalized, **substrate**; method of fabrication of lithium ion **battery**)
IT **Battery** electrolytes
Conducting polymers
(method of fabrication of lithium ion **battery**)
IT Oxides (inorganic), uses
Polyacetylenes, uses
Polyanilines
Selenides
Sulfides, uses
RL: DEV (Device component use); USES (Uses)
(method of fabrication of lithium ion **battery**)
IT Disulfides
RL: DEV (Device component use); USES (Uses)
(org., polymers; method of fabrication of lithium ion **battery**)
IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene **24937-79-9**, Pvdf **24968-11-4**, Poly(ethylene naphthalate) **25038-59-9**, Polyethylene terephthalate, uses **25230-87-9**
RL: TEM (Technical or engineered material use); USES (Uses)
(metalized, **substrate**; method of fabrication of lithium ion **battery**)
IT 96-47-9, 2-Methyltetrahydrofuran 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 109-99-9, Thf, uses 110-71-4 1314-62-1, Vanadium oxide (V2O5), uses 1317-33-5, Molybdenum

sulfide mos2, uses 1332-29-2, Tin oxide 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compds. 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses 11098-99-0, Molybdenum oxide 11118-57-3, Chromium oxide 11126-15-1, Lithium vanadium oxide 12034-78-5, Niobium selenide nbse3 12037-42-2, Vanadium oxide v6o13 12039-13-3, Titanium sulfide (TiS2) 12067-28-6, Vanadium sulfide v5s8 12138-17-9, Vanadium sulfide v2s5 12627-00-8, Niobium oxide 21324-40-3, Lithium hexafluorophosphate 25067-58-7, Polyacetylene 25233-30-1, Polyaniline 29935-35-1, Lithium hexafluoroarsenate 30555-21-6, 1,3,4-Thiadiazolidine-2,5-dithione homopolymer 30604-81-0, Polypyrrole 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide 131344-56-4, Cobalt lithium nickel oxide 162684-16-4, Lithium manganese nickel oxide 214536-41-1, Cobalt lithium manganese oxide
RL: DEV (Device component use); USES (Uses)
(method of fabrication of lithium ion **battery**)

IT 31904-29-7, n-Butylferrocene
RL: MOA (Modifier or additive use); USES (Uses)
(method of fabrication of lithium ion **battery**)

L87 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:472703 HCAPLUS
DOCUMENT NUMBER: 141:26118
TITLE: Laminate structures for preparation of solid-state polymer **batteries** and solid-state polymer **batteries** and their manufacture
INVENTOR(S): Uemura, Ryuzo; Senbokuya, Ryoichi; Takahashi, Yukinori; Osawa, Yasuhiko
PATENT ASSIGNEE(S): Nissan Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004164865	A2	20040610	JP 2002-325785	20021108

PRIORITY APPLN. INFO.: JP 2002-325785 20021108

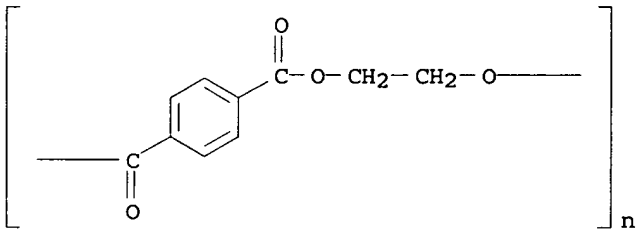
AB A collector **coated** with an electrode material and a transparent **substrate coated** with a catalytic **metal** are laminated with the **coatings** facing each other, the laminate is irradiated with ≥1 of UV beam, radiation, electron beam from the transparent **substrate** side under simultaneous heating for polymn. and solidification of the electrode material, and then the transparent **substrate** is released to obtain a laminate structure for prepn. of solid-state polymer **batteries**. Method for manuf. of solid-state **batteries** including lamination of a thus manufd. cathode and a thus manufd. **anode**, both having electrolyte material **coatings**, followed by their irradn. with ≥1 of UV, radiation, electron beam under simultaneous heating for polymn. and

solidification of the electrolyte material is also claimed.

IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: DEV (Device component use); USES (Uses)
(transparent catalyst support; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M004-04
ICS H01M004-02; H01M004-66; H01M006-18; H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST solid state polymer **battery** manuf; irradn heat polymn electrode solid state **battery**; electrolyte irradn heat polymn solid state **battery**

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(acrylic, block; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT Noble **metals**
RL: DEV (Device component use); USES (Uses)
(catalyst; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT **Battery** electrodes
Battery electrolytes
(manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT Polymerization
(photopolymn.; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT Primary **batteries**
(solid-state; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT Polymerization
(thermal; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(transparent catalyst support; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-57-5, Gold, uses
RL: DEV (Device component use); USES (Uses)
(catalyst; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 11134-23-9, SUS 316L 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(collector, catalyst; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)
IT 112529-10-9P
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)
IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: DEV (Device component use); USES (Uses)
(transparent catalyst support; manuf. of solid-state polymer **batteries** including photo- and thermal polymn. of electrodes and electrolytes)

L87 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:433948 HCAPLUS
DOCUMENT NUMBER: 140:426125
TITLE: **Coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes
INVENTOR(S): Zaghib, Karim; Armand, Michel; Guerfi, Abdelbast; Perrier, Michel; Dupuis, Elisabeth; Charest, Patrick
PATENT ASSIGNEE(S): Hydro-Quebec, Can.
SOURCE: PCT Int. Appl., 37 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004045007	A2	20040527	WO 2003-CA1739	200311 13
			<--	
WO 2004045007	A3	20050609		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2411695	AA	20040513	CA 2002-2411695	

				200211 13
CA 2503893	AA	20040527	CA 2003-2503893	200311 13
			<--	
EP 1573834	A2	20050914	EP 2003-775013	200311 13
			<--	

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PRIORITY APPLN. INFO.:		CA 2002-2411695	A 200211 13
		<--	
		WO 2003-CA1739	W 200311 13

AB An electrode for an electrochem. cell (esp. a **battery**) is prepd. by **coating** at least partially the electrode with a **film** obtained by spreading and drying of an aq. soln. on the electrode support, in which the aq. soln. contains at least an active material, a water-sol. binder, and a water-sol. thickener. Suitable active materials are selected from finely divided (particle size 10-50 μ) **metal** oxides (e.g., $LiMn_2O_4$, $LiCoO_2$, $LiFePO_4$, $LiNiO_2$, $Li_4Ti_5O_{12}$, etc.), ceramics, carbon (including carbon fibers, synthetic graphite, and natural graphite), **metals** (e.g., Ag, Sn, and Cu), and semiconductors (esp. Si). Suitable thickeners include natural and modified celluloses (e.g., CM-cellulose and hydroxymethyl cellulose); suitable binders include natural and synthetic rubber. Both **anodes** and cathodes can be prepd. by this method. The method for electrode fabrication is esp. useful for construction of secondary lithium **batteries** with nonaq. electrolytes and polymeric separators.

IT **9004-32-4**, Carboxymethyl cellulose
RL: NUU (Other use, unclassified); USES (Uses)
(Cellogen, thickener, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

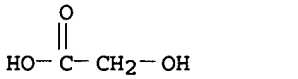
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3

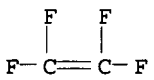


IT **9002-84-0**, Poly(tetrafluoroethene) **9011-17-0**
24937-79-9, Poly(vinylidene fluoride)
RL: NUU (Other use, unclassified); USES (Uses)
(**battery** separators; **coating** of
substrates with active material, binder, and thickener
for fabrication of **battery** electrodes)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

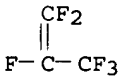
CRN 116-14-3
CMF C2 F4



RN 9011-17-0 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with 1,1-difluoroethene (9CI) (CA INDEX NAME)

CM 1

CRN 116-15-4
CMF C3 F6



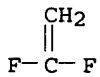
CM 2

CRN 75-38-7
CMF C2 H2 F2

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

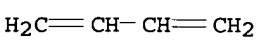
CRN 75-38-7
CMF C2 H2 F2



IT **9003-55-8**
RL: NUU (Other use, unclassified); USES (Uses)
(styrene-butadiene rubber, binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)
RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

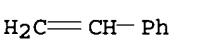
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



IC ICM H01M004-04
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** electrode **coating** carbon encapsulation; thickener binder **battery** electrode **coating**
IT Ceramics
Semiconductor materials
(**battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)
IT Carbon fibers, uses
Coke
Metals, uses
Oxides (inorganic), uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)
IT EPDM rubber
Fluoropolymers, uses
Polyesters, uses
Polyoxyalkylenes, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**battery** separators; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)
IT Acrylic rubber

Epichlorohydrin rubber
Natural rubber, uses
Nitrile rubber, uses
Styrene-butadiene rubber, uses
Synthetic rubber, uses
RL: NUU (Other use, unclassified); USES (Uses)
(binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT **Battery anodes**
Battery cathodes
Battery electrodes
Coating materials
(**coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT Nitrile rubber, uses
RL: NUU (Other use, unclassified); USES (Uses)
(hydrogenated, binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT Secondary **batteries**
(lithium **batteries**; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT **Battery** electrolytes
(nonaq.; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT Secondary **battery** separators
(polymeric; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT Polysaccharides, uses
RL: NUU (Other use, unclassified); USES (Uses)
(thickener, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT Tin alloy, base
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT **9004-32-4**, Carboxymethyl cellulose
RL: NUU (Other use, unclassified); USES (Uses)
(Cellogen, thickener, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-44-0, Carbon, uses 7440-50-8, Copper, uses 7782-42-5, Graphite, uses 12031-65-1, Lithium nickel oxide (LiNiO2) 12031-95-7, Lithium titanium oxide (Li4Ti5O12) 12036-22-5, Tungsten oxide (WO2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12190-79-3, Cobalt lithium oxide (CoLiO2) 15365-14-7, Iron lithium phosphate (FeLiPO4) 128975-24-6, Lithium manganese nickel oxide (LiMn0.5Ni0.5O2)

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT **9002-84-0**, Poly(tetrafluoroethene) 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9011-14-7, Poly(methyl methacrylate) **9011-17-0 24937-79-9**, Poly(vinylidene fluoride) 25034-77-9, Ethylene-propylene-5-methylene-2-norbornene copolymer 25322-68-3, Polyethylene oxide 25322-69-4, Polypropylene oxide
RL: NUU (Other use, unclassified); USES (Uses)
(**battery** separators; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 9003-18-3
RL: NUU (Other use, unclassified); USES (Uses)
(nitrile rubber, binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 9003-18-3
RL: NUU (Other use, unclassified); USES (Uses)
(nitrile rubber, hydrogenated, binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 2832-49-7, N,N,N',N'-Tetraethylsulfamide 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 90076-65-6, LiTFSI 171611-11-3 244761-29-3, Lithium bis(oxalato)borate
RL: NUU (Other use, unclassified); USES (Uses)
(secondary **battery** nonaq. electrolytes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT **9003-55-8**
RL: NUU (Other use, unclassified); USES (Uses)
(styrene-butadiene rubber, binder, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 7429-90-5, Aluminum, uses 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(**substrate**, for **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

IT 9004-34-6, Cellulose, uses 37353-59-6, Hydroxymethyl cellulose
RL: NUU (Other use, unclassified); USES (Uses)
(thickener, for **coating** of **battery** electrodes; **coating** of **substrates** with active material, binder, and thickener for fabrication of **battery** electrodes)

L87 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:353018 HCAPLUS
DOCUMENT NUMBER: 140:342224
TITLE: **Anode** for lithium secondary **battery**

INVENTOR(S): Lee, Jea-Woan; Cho, Chung-Kun
PATENT ASSIGNEE(S): Samsung SDI Co,, Ltd., S. Korea
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004081889	A1	20040429	US 2003-603777	20030626
JP 2004146348	A2	20040520	JP 2003-164281	20030609
EP 1416573	A2	20040506	EP 2003-90199	20030704
EP 1416573	A3	20040804		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1492529	A	20040428	CN 2003-145389	20030707

PRIORITY APPLN. INFO.: KR 2002-65483 A 20021025

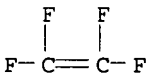
AB A **neg. electrode** for a lithium secondary **battery** includes a **substrate** having a mean **roughness** of 30 to 4000 Å and a lithium layer **coated** on the **substrate**, and a lithium secondary **battery** includes the **neg. electrode.** The obtained lithium secondary **battery** has improved cycle-life characteristics.

IT **9002-84-0**, Ptfe **9002-86-2**, Polyvinyl chloride **9003-53-6**, Polystyrene **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** for lithium secondary **battery**)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

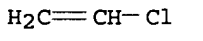
CRN 116-14-3
CMF C2 F4



RN 9002-86-2 HCAPLUS
CN Ethene, chloro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

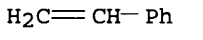
CRN 75-01-4
CMF C2 H3 Cl



RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

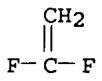
CRN 100-42-5
CMF C8 H8



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

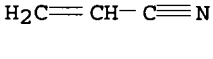
CRN 75-38-7
CMF C2 H2 F2



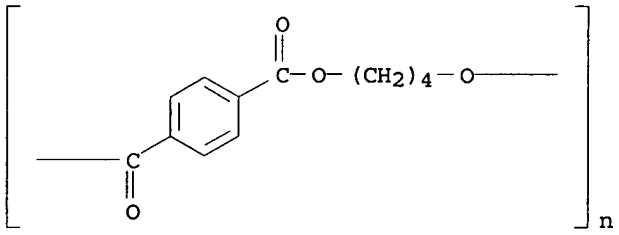
RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

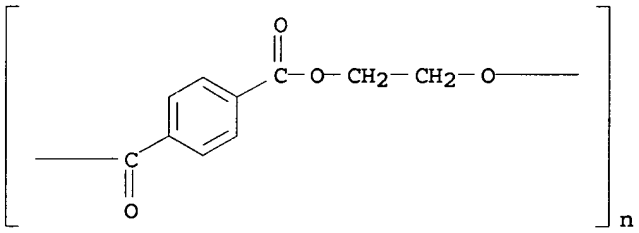
CRN 107-13-1
CMF C3 H3 N



IT **24968-12-5**, Polybutylene terephthalate **25038-59-9**, Polyethylene terephthalate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
RN 24968-12-5 HCAPLUS
CN Poly(oxy-1,4-butanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M004-64
ICS H01M004-60; H01M004-58; H01M004-48
INCL 429233000; 429245000; 429231950; 429231100; 429218100; 429213000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **anode** lithium secondary **battery**
IT **Battery anodes**
Perovskite-type crystals
(**anode** for lithium secondary **battery**)
IT Carbon black, uses
Carbonaceous materials (technological products)
Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT Polyamides, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT Polycarbonates, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT Polyolefins
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT Chalcogenides
Oxides (inorganic), uses
RL: DEV (Device component use); USES (Uses)
(lithiated; **anode** for lithium secondary **battery**
)
IT Secondary **batteries**
(lithium; **anode** for lithium secondary **battery**

)
IT Conducting polymers
(**substrate**; **anode** for lithium secondary **battery**)
IT **Metals**, uses
Polyacenes
Polyacetylenes, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; **anode** for lithium secondary **battery**)
IT 7704-34-9, Sulfur, uses 7704-34-9D, Sulfur, compd. 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9010-79-1, Ethylene-propylene copolymer 63143-57-7D, Carbon sulfide, polymer 74432-42-1, Lithium polysulfide
RL: DEV (Device component use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT 1332-29-2, Tin oxide 7439-93-2, Lithium, uses 7440-31-5, Tin, uses 7782-42-5, Graphite, uses **9002-84-0**, Ptfe **9002-86-2**, Polyvinyl chloride **9003-53-6**, Polystyrene 9011-14-7, Pmma 13463-67-7, Titanium oxide, uses 14417-93-7, Tin phosphate **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
RL: MOA (Modifier or additive use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT **24968-12-5**, Polybutylene terephthalate **25038-59-9**, Polyethylene terephthalate, uses 49717-87-5, 2-Propenoic acid, ion(1-) homopolymer, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**anode** for lithium secondary **battery**)
IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 25067-58-7, Polyacetylene 25190-62-9, Poly(p-phenylene) 25233-30-1, Polyaniline 25233-34-5, Polythiophene 28774-98-3, Polynaphthalene-2,6-diyl 30604-81-0, Polypyrrole 82451-56-7, Polyazulene 96638-49-2, Poly(phenylene vinylene) 114239-80-4, Polyperinaphthalene
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; **anode** for lithium secondary **battery**)

L87 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:252061 HCAPLUS
DOCUMENT NUMBER: 140:273594
TITLE: Lightweight secondary **battery** with high energy density
INVENTOR(S): Omaru, Atsuo
PATENT ASSIGNEE(S): Japan
SOURCE: U.S. Pat. Appl. Publ., 16 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004058247	A1	20040325	US 2003-661990	200309 11
JP 2004103475	A2	20040402	JP 2002-265951 <--	200209

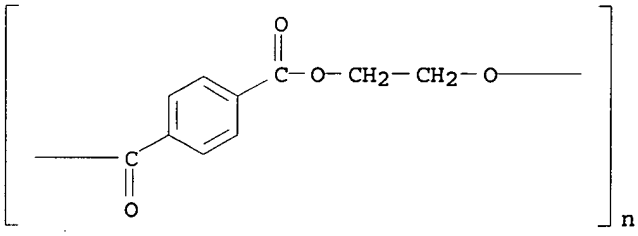
CN 1495942 A 20040512 CN 2003-164854
11
200309
11
<--
PRIORITY APPLN. INFO.: JP 2002-265951 A
200209
11
<--

AB Disclosed is a **battery** with a light wt. and a high energy d. The **battery** includes an **anode**, having a layer of an **anode** active material formed on an **anode substrate** , a cathode, including a layer of a cathode active material formed on a cathode **substrate** , and a nonaq. liq. electrolyte. The **anode substrate** includes an **anode** resin **film** contg. a polymer and an **anode metal** layer contg. an elec. conductive **metal.** Since the **anode** resin **film** reduces the wt. of the **anode substrate** and the **anode metal** layer imparts electron cond. to the **anode substrate,** the **battery** may be reduced in wt. without detracting from **battery** characteristics to increase the energy d.

IT **25038-59-9**, Mylar, uses
RL: DEV (Device component use); USES (Uses)
(lightwt. secondary **battery** with high energy d.)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M004-66
ICS H01M002-16; H01M004-52; H01M004-50; H01M004-48

INCL 429234000; 429246000; 429231100; 429231300; 429221000; 429231200; 429231500; 429224000; 429223000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery** lightwt secondary high energy density

IT **Metals**, uses
RL: DEV (Device component use); USES (Uses)
(layer; lightwt. secondary **battery** with high energy d.)

IT **Battery anodes**
Battery cathodes
Elasticity
Tensile strength
Thermal conductivity
(lightwt. secondary **battery** with high energy d.)

IT Carbonaceous materials (technological products)
Fluoropolymers, uses
Polyamides, uses
Polycarbonates, uses

Polyesters, uses
Polyolefins
Polythiophenylenes
Transition **metal** oxides
RL: DEV (Device component use); USES (Uses)
(lightwt. secondary **battery** with high energy d.)

IT Secondary **batteries**
(lithium; lightwt. secondary **battery** with high energy d.)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(nitrogen-contg.; lightwt. secondary **battery** with high energy d.)

IT Polymers, uses
RL: DEV (Device component use); USES (Uses)
(sulfur-contg.; lightwt. secondary **battery** with high energy d.)

IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7440-02-0, Nickel, uses 7440-32-6, Titanium, uses 7440-50-8, Copper, uses 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(layer; lightwt. secondary **battery** with high energy d.)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene 9004-35-7, Cellulose acetate 11109-50-5, Sus 304 11113-67-0, Iron lithium oxide 11126-15-1, Lithium vanadium oxide 12190-79-3, Cobalt lithium oxide colio2 25038-54-4, Nylon 6, uses **25038-59-9**, Mylar, uses 37220-89-6, Aluminum lithium oxide 39300-70-4, Lithium nickel oxide 39302-37-9, Lithium titanium oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide
RL: DEV (Device component use); USES (Uses)
(lightwt. secondary **battery** with high energy d.)

L87 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:697201 HCAPLUS
DOCUMENT NUMBER: 139:232989
TITLE: Method for the production and use of electric separator
INVENTOR(S): Hennige, Volker; Hying, Christian; Hoerpel, Gerhard
PATENT ASSIGNEE(S): Creavis Gesellschaft fuer Technologie und Innovation m.b.H., Germany
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003073534	A2	20030904	WO 2003-EP329	20030115
			<--	
WO 2003073534	A3	20041229		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ,

TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10208277	A1	20030904	DE 2002-10208277	200202 26
CA 2477062	AA	20030904	CA 2003-2477062	200301 15
			<--	
AU 2003210159	A1	20030909	AU 2003-210159	200301 15
			<--	
EP 1509960	A2	20050302	EP 2003-742922	200301 15
			<--	

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

US 2005084761	A1	20050421	US 2003-504144	200301 15
			<--	
CN 1639887	A	20050713	CN 2003-804638	200301 15
			<--	
PRIORITY APPLN. INFO.:			DE 2002-10208277 A	200202 26
			<--	
			WO 2003-EP329 W	200301 15

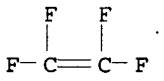
AB The invention relates to elec. separators and to a method for producing the same. The elec. separator is used in **batteries** and other systems in which electrodes have to be sepd. from one other while, e.g., maintaining their ionic cond. The separator is preferably a thin, porous, insulating material that has a high ionic permeability, good mech. strength and long-term resistance to the chems. and solvents used in the system, e.g., in the electrolyte of the **battery.** The aim of the invention is to provide a separator that completely insulates the cathode from the **anode** in **batteries**, that is permanently elastic and that follows the movements in the system, e.g., in the electrode stack during charge and discharge. This aim is achieved by providing the inventive elec. separator which comprises a planar, flexible **substrate** that has a plurality of openings and that further comprises a **coating** on and in the **substrate.** The **substrate** is a polymer nonwoven and the **coating** is a porous, elec. insulating, ceramic **coating.** The separator is characterized by having a thickness of less than 80 μm.

IT **9002-84-0**, Ptfe **25014-41-9**, Polyacrylonitrile
RL: TEM (Technical or engineered material use); USES (Uses)
(fibers, **substrate**; method for prodn. and use of elec.

separator)
RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

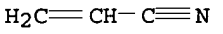
CRN 116-14-3
CMF C2 F4



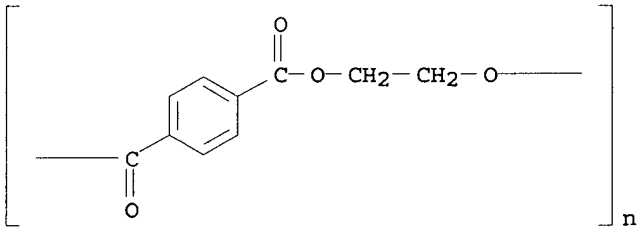
RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N



IT **25038-59-9**, Polyethylene terephthalate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method for prodn. and use of elec. separator)
RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M002-16
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72
ST elec separator fabrication; **battery** separator fabrication
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fibers, **substrate**; method for prodn. and use of elec. separator)
IT Secondary **batteries**
(lithium; method for prodn. and use of elec. separator)
IT **Coating** materials
(**metal** oxide; method for prodn. and use of elec. separator)
IT Porosity
Primary **battery** separators

Secondary **batteries**
Secondary **battery** separators
(method for prodn. and use of elec. separator)

IT Natural fibers
Polyamide fibers, uses
Polyester fibers, uses
Polyimide fibers
Polyolefin fibers
Synthetic polymeric fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; method for prodn. and use of elec. separator)

IT 1314-23-4, Zirconium oxide, uses 1314-36-9, Yttrium oxide, uses
1344-28-1, Aluminum oxide, uses 7631-86-9, Silicon oxide, uses
13463-67-7, Titanium oxide, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**coating**; method for prodn. and use of elec. separator)

IT **9002-84-0**, Ptfe **25014-41-9**, Polyacrylonitrile
RL: TEM (Technical or engineered material use); USES (Uses)
(fibers, **substrate**; method for prodn. and use of elec. separator)

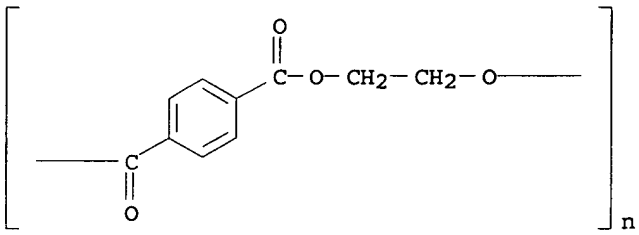
IT **25038-59-9**, Polyethylene terephthalate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method for prodn. and use of elec. separator)

L87 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:306638 HCAPLUS
DOCUMENT NUMBER: 139:135964
TITLE: Web **coating** with lithium - technical solution for **metal anode** structures in Li **batteries**
AUTHOR(S): Swisher, R.; Yadin, E.; Pipkevich, G.
CORPORATE SOURCE: Sheldahl, Inc., Northfield, MN, USA
SOURCE: Annual Technical Conference Proceedings - Society of Vacuum Coaters (**2002**), 45th, 535-538
CODEN: ATCCDI; ISSN: 0731-1699
PUBLISHER: Society of Vacuum Coaters
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An app. for single-sided vacuum **coating** of Li onto 340 mm wide rolls of materials was built. Li was **coated** onto many different **substrates**, from polyolefin **films** to Cu foils. To expand the design possibilities of metallic Li **anodes**, a more complex app. was commissioned which can **coat** Li onto polymer and foil webs of 150 mm width. It can produce single-sided and double-sided metallic Li **coatings** on selected **substrates.** It is used to perform feasibility studies and gather design data for prodn. machines for economically viable combinations of materials. SEM images of Li surfaces are discussed. Deposition of Li layers 2-20 μm thick on various polymeric **films** was performed. Thermo-phys. conditions of gaseous Li transfer from the vaporization source to the **substrate** were studied. Design criteria for the Li vapor generator with min. heat transfer are discussed.

IT **25038-59-9**, PET, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; in web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)

RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 48
ST lithium vacuum **coating** polymer **battery** **anode**
IT Vapor deposition process
(metalization, vacuum; web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; in web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
IT Vapor deposition apparatus
(vacuum; web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
IT **Battery anodes**
(web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
IT 7440-50-8, Copper, uses **25038-59-9**, PET, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; in web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
IT 7439-93-2, Lithium, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(web **coating** with lithium for prodn. of **anodes** for lithium **batteries**)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:172055 HCAPLUS
DOCUMENT NUMBER: 138:224149
TITLE: Nonsintered cathode, its manufacture, and alkaline **battery** using the cathode
INVENTOR(S): Fukunaga, Hiroshi; Kishimi, Mitsuhiro; Tamakoshi, Hiromi
PATENT ASSIGNEE(S): Hitachi Maxell Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2003068293 A2 20030307 JP 2001-252682
200108
23
<--
PRIORITY APPLN. INFO.: JP 2001-252682
200108
23
<--

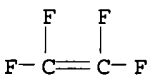
AB The cathode has a conductive **substrate** and an active mass paste; where the paste contains Ni(OH)2 particles having partial trivalent Ni3+ among its surface, a Na contg. Co oxide **coated** on the Ni(OH)2 particles, and a natural polysaccharide. The cathode is prepd. by applying the above paste on the conductive **substrate** made of a porous **metal** , filling, and press molding after drying. The **battery** has the above cathode, a H-absorbing alloy **anode**, a separator, and an electrolyte soln.

IT **9002-84-0**, Polytetrafluoroethylene **11138-66-2**, Kelzan AR
RL: DEV (Device component use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and natural polysaccharide for secondary alk. **batteries**)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



RN 11138-66-2 HCAPLUS
CN Xanthan gum (9CI) (CA INDEX NAME)

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

IC ICM H01M004-32
ICS H01G009-058; H01M004-26; H01M004-52; H01M010-30
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST secondary alk **battery** nickel hydroxide cathode structure manuf; cathode active mass paste natural polysaccharide
IT **Battery** cathodes
Secondary **batteries**
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and natural polysaccharide for secondary alk. **batteries**)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and natural polysaccharide for secondary alk. **batteries**)
IT 1312-43-2, Indium oxide 7440-64-4, Ytterbium, uses **9002-84-0**, Polytetrafluoroethylene 11104-61-3D, Cobalt oxide, sodium contg. **11138-66-2**, Kelzan AR 12054-48-7, Nickel hydroxide (Ni(OH)2) 21041-93-0, Cobalt hydroxide (Co(OH)2)

RL: DEV (Device component use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and natural polysaccharide for secondary alk. **batteries**)

IT 96949-22-3, K1A96
RL: MOA (Modifier or additive use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and natural polysaccharide for secondary alk. **batteries**)

L87 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:397238 HCAPLUS
DOCUMENT NUMBER: 135:7790
TITLE: Methods of preparing electrochemical cells
INVENTOR(S): Carlson, Steven A.
PATENT ASSIGNEE(S): Moltech Corporation, USA
SOURCE: PCT Int. Appl., 99 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001039301	A2	20010531	WO 2000-US32140	200011 21
			<--	
WO 2001039301	A3	20020110		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001019270	A5	20010604	AU 2001-19270	200011 21
			<--	
PRIORITY APPLN. INFO.:			US 1999-167149P P	199911 23
			<--	
			WO 2000-US32140 W	200011 21
			<--	

AB Provided are methods of prepg. an **anode**/separator assembly for use in electrochem. cells in which a microporous separator layer, such as a microporous xerogel layer, is **coated** on a temporary carrier **substrate**, and an **anode** active layer, such as lithium **metal**, is then deposited on the separator layer, prior to removing the temporary carrier **substrate** from the separator layer. One or more protective **coating** layers may be **coated** before or after the

coating step of the microporous separator layer and prior to depositing the **anode** active layer. Addnl. layers, including an edge insulating layer, an **anode** current collector layer, an electrode insulating layer, and a cathode current collector layer, may be applied subsequent to the **coating** step of the microporous separator layer. Also, provide are methods of prepg. electrochem. cells utilizing **anode**/separator assemblies prepd. by such methods, and **anode**/separator assemblies and electrochem. cells prepd. by such methods.

IT **9003-53-6D**, Polystyrene, sulfonated **25038-59-9**, Polyethylene terephthalate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(methods of prepg. electrochem. cells)

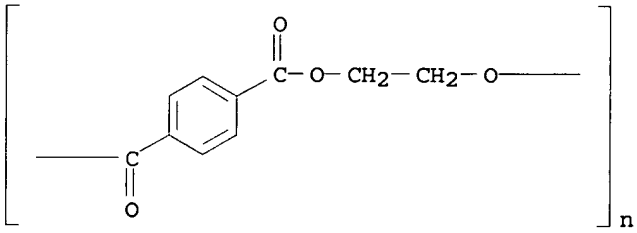
RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M004-00
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery anode** separator assembly
IT Conducting polymers
(**coatings**; methods of prepg. electrochem. cells)
IT Primary **batteries**
Secondary **batteries**
(lithium; methods of prepg. electrochem. cells)
IT **Battery anodes**
Battery electrolytes
Coating materials
Polymer electrolytes
Primary **battery** separators
Secondary **battery** separators
Xerogels
(methods of prepg. electrochem. cells)
IT 1314-23-4, Zirconium oxide, uses 1318-23-6, Pseudoboehmite 1332-29-2, Tin oxide 1344-28-1, Aluminum oxide, uses 2695-37-6, Sodium styrene-4-sulfonate 7440-50-8, Copper, uses 7631-86-9,

Silicon oxide, uses 9002-89-5, airvol 125 **9003-53-6D**, Polystyrene, sulfonated 13463-67-7, Titanium oxide, uses **25038-59-9**, Polyethylene terephthalate, uses 50856-26-3, Polyethylene glycol divinyl ether
RL: TEM (Technical or engineered material use); USES (Uses) (methods of prepg. electrochem. cells)

L87 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:397232 HCAPLUS
DOCUMENT NUMBER: 135:7784
TITLE: Methods of preparing a cathode/separator assembly for use in electrochemical cells
INVENTOR(S): Carlson, Steven A.
PATENT ASSIGNEE(S): Moltech Corporation, USA
SOURCE: PCT Int. Appl., 100 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001039293	A2	20010531	WO 2000-US32231	200011 21
			<--	
WO 2001039293	A3	20020117		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 2001017965	A5	20010604	AU 2001-17965	200011 21
			<--	

PRIORITY APPLN. INFO.:			US 1999-167150P	P	199911 23
			<--		
			WO 2000-US32231	W	200011 21
			<--		

AB Provided are methods of prepg. a cathode/separator assembly for use in electrochem. cells in which a protective **coating** layer, such as a single ion conducting layer, is **coated** on a temporary carrier **substrate**, a microporous separator layer is then **coated** on the protective **coating** layer, and a cathode active layer is then **coated** on the separator layer, prior to removing the temporary carrier **substrate** from the protective **coating** layer. Addnl. layers, including an edge insulating layer, a cathode current collector layer, an electrode insulating layer, an **anode** current

collector layer, an **anode** layer such as a lithium **metal** layer, and an **anode** protective layer, such as a single ion conducting layer, may be applied subsequent to the **coating** step of the microporous separator layer. Also, provided are methods of prepg. electrochem. cells utilizing cathode/separator assemblies prepd. by such methods, and cathode/separator assemblies and electrochem. cells prepd. by such methods.

IT **9003-53-6D**, Polystyrene, sulfonated **25038-59-9**, Polyethylene terephthalate, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(methods of prepg. cathode/separator assembly for use in electrochem. cells)

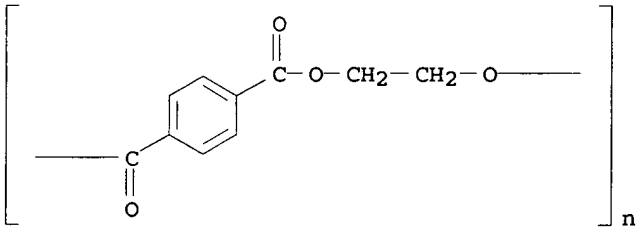
RN 9003-53-6 HCAPLUS
CN Benzene, ethenyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M002-00
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **battery** cathode separator assembly
IT Conducting polymers
(**coatings**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT Chalcogenides
RL: DEV (Device component use); USES (Uses)
(**metal**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT **Battery anodes**
Battery cathodes
Battery electrolytes
Polymer electrolytes
Primary **batteries**
Secondary **battery** separators
Xerogels
(methods of prepg. cathode/separator assembly for use in electrochem. cells)

IT **Metals**, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(polymers, **coatings**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT **Coating** materials
(polymers; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT Paper
(**substrate**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(sulfonated, **coatings**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT 87340-85-0
RL: TEM (Technical or engineered material use); USES (Uses)
(**coatings**; methods of prepg. cathode/separator assembly for use in electrochem. cells)
IT 1314-23-4, Zirconium oxide, uses 1318-23-6, Pseudoboehmite 1332-29-2, Tin oxide 1344-28-1, Alumina, uses 2695-37-6, Sodium styrene-4-sulfonate 7631-86-9, Silica, uses 9002-89-5, Polyvinyl alcohol **9003-53-6D**, Polystyrene, sulfonated 11114-17-3, Fluorad FC 430 13463-67-7, Titanium oxide, uses **25038-59-9**, Polyethylene terephthalate, uses 50856-26-3, Polyethylene glycol divinyl ether 122525-99-9, Zonyl FSO-100
RL: TEM (Technical or engineered material use); USES (Uses)
(methods of prepg. cathode/separator assembly for use in electrochem. cells)

L87 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:609047 HCAPLUS
DOCUMENT NUMBER: 133:180395
TITLE: Solid gel membrane
INVENTOR(S): Chen, Muguo; Tsai, Tsepin; Yao, Wayne; Chang, Yuen-ming; Li, Lin-feng; Tom, Karen
PATENT ASSIGNEE(S): Reveo, Inc., USA
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000051198	A2	20000831	WO 2000-US4881	20000225
			<--	
WO 2000051198	A3	20010111		

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,

LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

US 2003099872	A1	20030529	US 1999-259068	199902 26
US 6605391	B2	20030812		
US 6358651	B1	20020319	US 2000-482126	200001 11
			<--	
CA 2362298	AA	20000831	CA 2000-2362298	200002 25
			<--	
EP 1155467	A2	20011121	EP 2000-913617	200002 25
			<--	

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO

BR 2000008506	A	20020205	BR 2000-8506	200002 25
			<--	
JP 2002538585	T2	20021112	JP 2000-601703	200002 25
			<--	
AU 772935	B2	20040513	AU 2000-35030	200002 25
			<--	

PRIORITY APPLN. INFO.:	US 1999-259068	A	199902 26
	<--		
	US 2000-482126	A	200001 11
	<--		
	WO 2000-US4881	W	200002 25
	<--		

AB A highly conductive polymer based solid gel membrane is esp. well-suited for use in such electrochem. devices as **metal** /air, Zn/MnO2, Ni/Cd **batteries** and hydrogen fuel cells, as well as in electrochromic devices such as smart windows and flat panel displays. Furthermore, in rechargeable electrochem. cells, the solid gel membrane is highly-effective for use as a separator between the **anode** and charging electrode. In accordance with the principles of the invention, the highly conductive membrane comprises a support or **substrate** and a polymeric gel compn. having an ionic species contained in a soln. phase thereof. The polymer-based gel is prepd. by adding an ionic species to a monomer soln. followed by polymn. After polymn., the ionic species is embedded in the polymer-based gel where it remains. The ionic species behaves like a liq. electrolyte, while at the same time, the

polymer-based solid gel membrane provides a smooth impenetrable surface that allows for the exchange of ions. An advantage of the novel membrane is that its measured ionic cond. is much higher than previously obsd. in prior art solid electrolytes or electrolyte-polymer **films.**

IT **9004-32-4**, Carboxymethyl cellulose **25038-59-9**, Polyethylene terephthalate, uses **25704-18-1**, Poly(sodium 4-styrenesulfonate) **104983-61-1**, Maleic acid-styrenesulfonic acid copolymer, sodium salt
RL: TEM (Technical or engineered material use); USES (Uses)
(ionic conducting polymer-based solid gel membrane)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

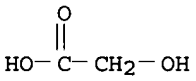
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

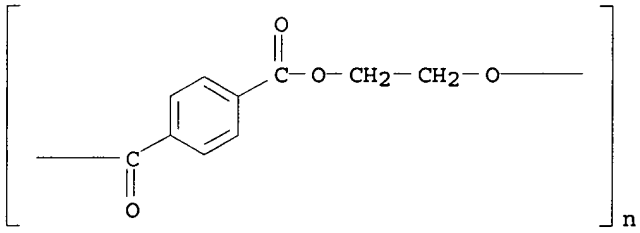
*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3



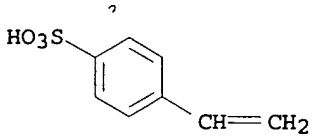
RN 25038-59-9 HCAPLUS
CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



RN 25704-18-1 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl-, sodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2695-37-6
CMF C8 H8 O3 S . Na



RN 104983-61-1 HCAPLUS
CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzenesulfonic acid, sodium salt (9CI) (CA INDEX NAME)

CM 1

CRN 78145-90-1
CMF (C8 H8 O3 S . C4 H4 O4)x
CCI PMS

CM 2

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

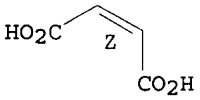
D1— CH═ CH2

D1— SO3H

CM 3

CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.



IC ICM H01M006-22
ICS H01M012-06; H01B001-12; C08F251-02; C08F257-02; C08L051-02; C08F251-00; C08F273-00; B01D069-10; G02F001-15
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 35, 38, 74

ST **battery** electrolyte gel membrane; fuel cell electrolyte gel membrane; electrochromic device electrolyte gel membrane; display device electrolyte gel membrane

IT Fuel cell separators
Fuel cells
Polymerization
Polymerization catalysts
Secondary **batteries**
Secondary **battery** separators
(ionic conducting polymer-based solid gel membrane)

IT Alkali **metal** oxides
RL: CAT (Catalyst use); USES (Uses)
(peroxides; ionic conducting polymer-based solid gel membrane)

IT Peroxysulfates
RL: CAT (Catalyst use); USES (Uses)
(peroxydisulfates, alkali **metal**; ionic conducting polymer-based solid gel membrane)

IT **9004-32-4**, Carboxymethyl cellulose 9005-25-8, Corn starch, uses **25038-59-9**, Polyethylene terephthalate, uses **25704-18-1**, Poly(sodium 4-styrenesulfonate) 97917-26-5, Acrylamide-Methacrylic acid-methylenebis(acrylamide) copolymer **104983-61-1**, Maleic acid-styrenesulfonic acid copolymer, sodium salt
RL: TEM (Technical or engineered material use); USES (Uses)
(ionic conducting polymer-based solid gel membrane)

L87 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:496687 HCAPLUS
DOCUMENT NUMBER: 127:97535
TITLE: **Anode** for secondary nonaqueous **battery**
INVENTOR(S): Shoji, Yoshihiro; Kusumoto, Yasuyuki; Yamasaki, Mikiya; Nohma, Toshiyuki; Nishio, Koji
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Eur. Pat. Appl., 7 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 778630	A1	19970611	EP 1996-119535	199612 05
			<--	
EP 778630	B1	19990421		
R: DE, FR, GB				
JP 09161777	A2	19970620	JP 1995-345132	199512 06
			<--	
JP 3286516	B2	20020527		
US 5721069	A	19980224	US 1996-760567	199612 04
			<--	
CA 2192261	AA	19970607	CA 1996-2192261	199612 06

<--

CA 2192261 C 20030909
PRIORITY APPLN. INFO.: JP 1995-345132 A 199512 06

<--

AB The **anode** is prepd. by **coating** a **substrate** with a slurry comprising a C material, an alkali **metal** (Na, K, Li) salt of CMC, and a butadiene-styrene rubber and drying. The alkali **metal** salt accounts for 0.5-2 wt.% of the C material, rubber, and CMC alkali **metal** salt. The C material has the crystallite size in the direction of c axis of ≥150 Å and the spacing of (002) planes of ≤3.38 Å. Because of the higher elec. cond. of the CMC alkali **metal** salt used as the thickening agent than the conventional CMC or its ammonium salt, the secondary **battery** including the above **anode** has an excellent load characteristic.

IT **9004-32-4**, Sodium CMC
RL: MOA (Modifier or additive use); USES (Uses)
(carbon **battery anode** contg. butadiene-styrene rubber and)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

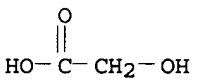
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 79-14-1
CMF C2 H4 O3

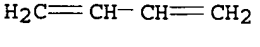


IT **9003-55-8**
RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber, carbon **battery anode** contg. alkali **metal** salt of CMC and)

RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM H01M004-58
ICS H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** nonaq secondary **anode**; alkali **metal** salt CMC **battery anode**; butadiene styrene rubber **battery anode**; carbon alkali **metal** salt CMC **anode**
IT Styrene-butadiene rubber, uses
RL: MOA (Modifier or additive use); USES (Uses)
(carbon **battery anode** contg. alkali **metal** salt of CMC and)
IT **Battery anodes**
(of carbon material and alkali **metal** salt of CMC and butadiene-styrene rubber)
IT 7440-44-0, Carbon, uses 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(**battery anode** contg. alkali **metal** salt of CMC and butadiene-styrene rubber)
IT **9004-32-4**, Sodium CMC 54848-04-3, Cellulose, carboxymethyl ether, potassium salt 55962-76-0, Cellulose, carboxymethyl ether, lithium salt
RL: MOA (Modifier or additive use); USES (Uses)
(carbon **battery anode** contg. butadiene-styrene rubber and)
IT **9003-55-8**
RL: MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber, carbon **battery anode** contg. alkali **metal** salt of CMC and)

L87 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:506435 HCAPLUS
DOCUMENT NUMBER: 125:173349
TITLE: Covering of **battery** alkali **metal anode** with mechanically perforated synthetic polyester **film**
INVENTOR(S): Nesselbeck, Neal N.; Spaulding, Joseph E.; Muffoletto, Barry C.
PATENT ASSIGNEE(S): Wilson Greatbatch Ltd., USA
SOURCE: U.S., 10 pp., Cont.-in-part of U.S. Ser. No. 82,235, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5536279	A	19960716	US 1995-406110	199503 31

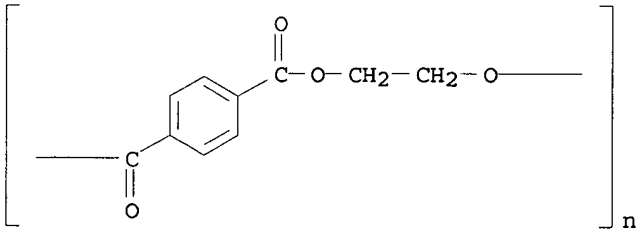
			<--	
AU 9464618	A1	19950105	AU 1994-64618	199406 08
			<--	
AU 676293	B2	19970306		
JP 07094172	A2	19950407	JP 1994-132983	199406 15
			<--	
JP 3452642	B2	20030929		
AT 205638	E	20010915	AT 1994-304445	199406 20
			<--	
PRIORITY APPLN. INFO.:			US 1993-82235 B2	199306 24
			<--	

AB In an alkali **metal**-halogen or oxyhalide **battery**, an alkali **metal**, preferably Li **anode**, has a surface in operative contact with a halogen-contg. or oxyhalide cathode/electrolyte including a solvent if necessary, an electrode covering, preferably applied on the **anode** surface comprises a nonfabric, continuous and solid **film** of **substrate** material having a uniform unit wt. The **substrate** material is perforated to provide for ion flow through it and **coated** with org. electron donor material, or other suitable **coating** material. The **film substrate** material preferably comprises a mech. perforated synthetic polyester, poly(ethylene terephthalate) **film**, and the **film** is prepd. by contacting with a soln. of the org. material and solvent followed by drying. The resulting **coated film** is flexible and is applied to the operative surface of the electrode and covering it, preferably adhered to the surface by pressing. The flexible **film** can be applied equally well to smooth, flat, or irregular electrode surfaces. The org. electron donor material comprises poly(2-vinylpyridine).

IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(covering of **battery** alkali **metal** **anode** with mech. perforated)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M006-18
ICS H01M004-08

INCL 029623500

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST alkali **metal battery anode** polyester covering; polyethylene terephthalate covering **battery anode**; polyvinylpyridine **coating** polyester covering **battery anode**; lithium **anode** polyvinylpyridine **coating** polyester covering
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(covering of **battery** alkali **metal anode** with mech. perforated)
IT **Anodes**
(**battery**, lithium covering with mech. perforated synthetic polyester **film**)
IT 25014-15-7, Poly(2-vinylpyridine)
RL: TEM (Technical or engineered material use); USES (Uses)
(**battery** alkali **metal anode** with mech. perforated polyethylene terephthalate covering **coated** with)
IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(**battery anode** covering with mech. perforated synthetic polyester **film**)
IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(covering of **battery** alkali **metal anode** with mech. perforated)

L87 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:931594 HCAPLUS
DOCUMENT NUMBER: 123:345752
TITLE: Perforated electrode covering from electron donor material **coated** on polyester **films**
INVENTOR(S): Nesselbeck, Neal N.; Spaulding, Joseph E.; Muffoletto, Barry C.
PATENT ASSIGNEE(S): Wilson Greatbatch Ltd., USA
SOURCE: U.S., 11 pp. Cont.-in-part of U.S. Ser. No. 82, 235.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5458994	A	19951017	US 1995-406295	199503 17
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AU 9464618	A1	19950105	AU 1994-64618	199406 08
			<--	
AU 676293	B2	19970306		
JP 07094172	A2	19950407	JP 1994-132983	199406 15
			<--	

JP 3452642 B2 20030929
AT 205638 E 20010915 AT 1994-304445
199406
20
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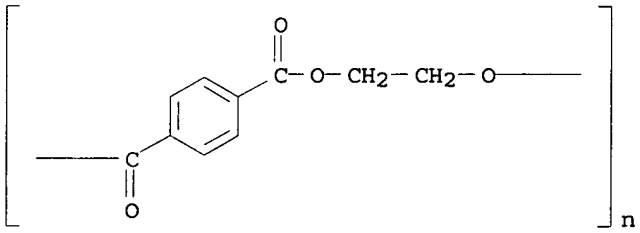
PRIORITY APPLN. INFO.: US 1993-82235 B2
199306
24
<--

AB In an alkali **metal** (esp. Li)-halogen or oxyhalide **battery**, the electrodes (esp. the **anodes**) have a surface in contact with a halogen-contg. or oxyhalide electrolyte including a solvent, where an electrode covering applied on the surface comprises a non-fabric, continuous and solid **film** of **substrate** material having a uniform unit wt. The **substrate** material is perforated to provide for ion flow and **coated** with org. electron donor material (e.g., polyvinylpyridine), or other suitable **coating** material. The **film substrate** material preferably comprises a mech. perforated synthetic polyester **film** material, and the **film** is prepd. by contacting with a soln. of the org. material and solvent followed by drying. The resulting **coated film** is flexible and is applied to the operative surface of the electrode thereby covering the same, preferably adhered to the surface by pressing. The flexible **film** can be applied equally well to electrode surfaces which are either smooth and flat or irregular.

IT **25038-59-9**, Polyethylene terephthalate, uses
RL: DEV (Device component use); USES (Uses)
(**films**; perforated electrode covering from electron donor material **coated** on polyester **film**)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M006-18
ICS H01M004-60

INCL 429101000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium halogen **battery** electrode covering; polyvinylpyridine lithium **anode** covering

IT Polyesters, uses
RL: DEV (Device component use); USES (Uses)
(**films**; perforated electrode covering from electron donor material **coated** on polyester **film**)

IT Electrodes
(**battery**, lithium-halogen or oxyhalide; with perforated electrode covering from electron donor material **coated** on polyester **film**)

IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(**anode**; perforated electrode covering from electron donor material **coated** on polyester **film**)
IT 25014-15-7, Poly-2-vinylpyridine
RL: DEV (Device component use); USES (Uses)
(donor; perforated electrode covering from electron donor material **coated** on polyester **film**)
IT **25038-59-9**, Polyethylene terephthalate, uses
RL: DEV (Device component use); USES (Uses)
(**films**; perforated electrode covering from electron donor material **coated** on polyester **film**)

L87 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:438204 HCAPLUS
DOCUMENT NUMBER: 122:192515
TITLE: Covered electrode for **batteries**
INVENTOR(S): Nesselbeck, Neil N.; Muffoletto, Barry C.; Spaulding, Joseph E.
PATENT ASSIGNEE(S): Wilson Greatbatch Ltd., USA
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 639863	A2	19950222	EP 1994-304445	19940620
			<--	
EP 639863	B1	20010912		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, NL, PT, SE				
AU 9464618	A1	19950105	AU 1994-64618	19940608
			<--	
AU 676293	B2	19970306		
JP 07094172	A2	19950407	JP 1994-132983	19940615
			<--	
JP 3452642	B2	20030929		
AT 205638	E	20010915	AT 1994-304445	19940620
			<--	
PRIORITY APPLN. INFO.:			US 1993-82235 A	19930624
			<--	

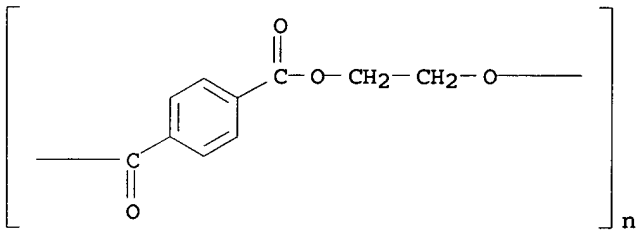
AB In an esp. alkali **metal**-halogen or oxyhalide **battery**, where an **anode**, preferably Li, has a surface in operative contact with an electrolyte or cathode/electrolyte including a solvent if necessary, an electrode covering, preferably applied on the **anode** surface comprises a **film** of an ion-impermeable **substrate** material. The **substrate** material is perforated to provide for ion flow and **coated** with an org. electron donor

material. The thin **film substrate** material preferably comprising a perforated synthetic polyester **film** material may be prepd. by contacting it with a soln. of the org. electron donor material and solvent followed by drying. The resulting **coated** flexible thin **film** is applied to the operative surface of the electrode cover it, and is preferably adhered to the surface by pressing. The flexible **film** can be applied equally well to smooth and flat or irregular electrode surfaces.

IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: NUU (Other use, unclassified); USES (Uses)
(**battery anode** covered with org. electron donor-**coated** perforated **film** of)

RN 25038-59-9 HCAPLUS

CN Poly(oxy-1,2-ethanediyloxycarbonyl-1,4-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M002-16
ICS H01M004-12; H01M004-02; H01M006-18

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST lithium oxyhalide **battery anode** covering; polyester **film battery anode** covering

IT **Anodes**
(**battery**, covered with org. electron donor-**coated** perforated synthetic polyester **film**)

IT **25038-59-9**, Poly(ethylene terephthalate), uses
RL: NUU (Other use, unclassified); USES (Uses)
(**battery anode** covered with org. electron donor-**coated** perforated **film** of)

IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(**battery anode** covered with org. electron donor-**coated** perforated synthetic polyester **film**)

IT 25014-15-7, Poly-2-vinylpyridine
RL: NUU (Other use, unclassified); USES (Uses)
(lithium **battery anode** covered with perforated synthetic polyester **film coated** with)

L87 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:87668 HCAPLUS
DOCUMENT NUMBER: 116:87668
TITLE: Hydrogen-absorbing **anodes**, their manufacture, and secondary **metal** /hydrogen **batteries**
INVENTOR(S): Yanagihara, Nobuyuki; Kawano, Hiroshi
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03173062	A2	19910726	JP 1989-313590	19891201
			<--	
JP 3104230	B2	20001030		

PRIORITY APPLN. INFO.: JP 1989-313590 19891201
<--

AB The **anodes** contain a mixt. of a 1st powder of a H-absorbing alloy AB2, AB, or A2B (A = Ti, Zr, Hf, and/or Mg; B is ≥2 of Ni, V, Co, Nb, Cr, Mo, Mn, Fe, Cu, Zn, Sn, Al, Si, and Sb) and a 2nd powder of a H-absorbing alloy A'B5 (A' = misch **metal** optionally contg. Y, Th, Zr, and/or Ti) with ≥1 of the powders partly covered with elec. conductive **metals** or ceramics, and the **anodes** may also contain a binder, e.g., rubber, polyethylene, or a fluoropolymer. The powders may also contain O-reducing catalyst on their surface. The **anodes** are prepd. by pressing the mixt. on **substrates** and sintering in vacuum or an inert atm. **Batteries** using these **anodes** have high energy d. and long cycle life.

IT **9004-32-4**, CMC **25067-11-2**
RL: USES (Uses)
(**anodes** contg., hydrogen-absorbing, for **batteries**)

RN 9004-32-4 HCAPLUS
CN Cellulose, carboxymethyl ether, sodium salt (8CI, 9CI) (CA INDEX NAME)

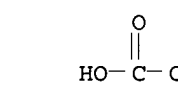
CM 1

CRN 9004-34-6
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

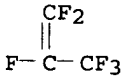
CRN 79-14-1
CMF C2 H4 O3



RN 25067-11-2 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

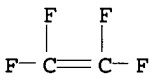
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-24
ICS C25B011-10; H01M004-26; H01M010-34
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **metal** hydrogen **battery**; hydrogen absorbing **battery anode**; ceramic **coating** hydrogen absorbing **anode**
IT Rubber, synthetic
RL: USES (Uses)
(**anodes** contg., hydrogen-absorbing, for **batteries**)
IT Ceramic materials and wares
(elec. conductive, **anodes** from hydrogen-absorbing alloy particles **coated** with, for **batteries**)
IT **Anodes**
(**battery**, hydrogen-absorbing alloys for, **metal** - or cond. ceramic-**coated** powd.)
IT 1333-74-0, Hydrogen, uses
RL: USES (Uses)
(alloys contg. absorbed, **anodes** from **metal**- or cond. ceramic-**coated** powd., for **batteries**)
IT 9002-89-5, Poly(vinyl alcohol) **9004-32-4**, CMC **25067-11-2**
RL: USES (Uses)
(**anodes** contg., hydrogen-absorbing, for **batteries**)
IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses
RL: USES (Uses)
(**anodes** from hydrogen-absorbing alloy particles **coated** with conductive, for **batteries**)
IT 106934-76-3 130470-04-1 131834-64-5 131834-88-3 139102-69-5 139102-70-8 139102-71-9
RL: USES (Uses)
(hydrogen-absorbing, **anodes** contg. **metal**- or cond. ceramic-**coated** powder of, for **batteries**)
IT 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses
RL: USES (Uses)

(oxygen-reducing catalyst, **anodes** from hydrogen-absorbing alloy particles **coated** with, for **batteries**)

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=> d l85 que stat
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L6            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  24968-12-5/RN
L7            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  25038-59-9/RN
L8            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  24937-79-9/RN
L9            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-84-0/RN
L10      118223 SEA FILE=REGISTRY ABB=ON  PLU=ON  PSTY/PCT
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L12           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-86-2/RN
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L30       94999 SEA FILE=REGISTRY ABB=ON  PLU=ON  L28 NOT L29
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L35       76100 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L7
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L40       45337 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L9
L41      318695 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L10
L42       15751 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L11
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L62      130062 SEA FILE=HCAPLUS ABB=ON  PLU=ON  BATTERY OR BATTERIES
L63     1994611 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FILM# OR COAT?
L64     1054929 SEA FILE=HCAPLUS ABB=ON  PLU=ON  SUBSTRATE#
L66           1 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L61 AND L62 AND
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L68          18 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L38 AND L61 AND L62 AND
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=> d l85 1-23 ibib abs hitstr hitind

L85  ANSWER 1 OF 23  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2004:802385  HCAPLUS
DOCUMENT NUMBER:          141:298755
TITLE:                    Ionically conductive membranes for protection of
                          active metal anodes and
                          battery cells
INVENTOR(S):              Visco, Steven J.; Nimon, Yevgeniy S.; Katz,
                          Bruce D.
PATENT ASSIGNEE(S):       Polyplus Battery Company, USA
SOURCE:                   U.S. Pat. Appl. Publ., 25 pp., Cont.-in-part of
                          U.S. Ser. No. 731,771.
                          CODEN: USXXCO
DOCUMENT TYPE:            Patent
LANGUAGE:                 English
FAMILY ACC. NUM. COUNT:   5
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.         DATE
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     US 2004191617        A1    20040930    US 2004-772228
                                                                    200402
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     US 2004126653        A1    20040701    US 2003-686189
                                                                    200310
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     US 2004142244        A1    20040722    US 2003-731771
                                                                    200312
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     WO 2005038962        A2    20050428    WO 2004-US33372
                                                                    200410
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     WO 2005038962        A3    20051229
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             CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
             GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
             KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
             MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
             SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
             VC, VN, YU, ZA, ZM, ZW
         RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
             AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
             DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
             PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
             GW, ML, MR, NE, SN, TD, TG
     US 2005100793        A1    20050512    US 2004-986441
                                                                    200411
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PRIORITY APPLN. INFO.:                     US 2002-418899P     P
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US 2003-511710P	P	200310 14
US 2003-686189	A2	200310 14
US 2003-518948P	P	200311 10
US 2003-731771	A2	200312 05
US 2004-772228	A	200402 03

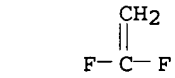
AB Disclosed are ionically conductive membranes for protection of active **metal anodes** and methods for their fabrication. The membranes may be incorporated in active **metal anode** structures and **battery** cells. In accordance with the invention, the membrane has the desired properties of high overall ionic cond. and chem. stability towards the **anode**, the cathode and ambient conditions encountered in **battery** manufg. The membrane is capable of protecting an active **metal anode** from deleterious reaction with other **battery** components or ambient conditions while providing a high level of ionic cond. to facilitate manuf. and/or enhance performance of a **battery** cell in which the membrane is incorporated.

IT **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile
RL: DEV (Device component use); USES (Uses)
(ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

$H_2C{=}CH{-}C{\equiv}N$

IC ICM H01M002-16
ICS H01M010-36
INCL 429137000; 429246000; 429304000; 429320000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **battery anode** ionically conductive membrane
IT **Battery anodes**
Ceramics
Gelation agents
Glass ceramics
Ionic liquids
Primary **batteries**
Secondary **batteries**
(ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Esters, uses
Ethers, uses
Fluoropolymers, uses
Halides
Metallic glasses
Nitrides
Phosphonium compounds
Polyoxyalkylenes, uses
Polysulfides
RL: DEV (Device component use); USES (Uses)
(ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Glass, uses
RL: DEV (Device component use); USES (Uses)
(oxynitride, phosphorus; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Group VA element compounds
RL: DEV (Device component use); USES (Uses)
(phosphides; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Oxynitrides
RL: DEV (Device component use); USES (Uses)
(phosphorus, glass; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Primary **batteries**
(solid-state; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Quaternary ammonium compounds, uses
RL: DEV (Device component use); USES (Uses)
(tetraalkyl; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT Lithium alloy, base
RL: DEV (Device component use); USES (Uses)
(ionically conductive membranes for protection of active **metal anodes** and **battery** cells)
IT 1308-80-1, Copper nitride cu3n
RL: TEM (Technical or engineered material use); USES (Uses)

(**coating**; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

IT 1308-87-8, Dysprosium oxide (Dy2O3) 1308-96-9, Europium oxide (Eu2O3) 1310-53-8, Germanium dioxide, uses 1313-97-9, Neodymium oxide (Nd2O3) 1314-23-4, Zirconia, uses 1314-37-0, Ytterbium oxide (Yb2O3) 1314-56-3, Phosphorus oxide (P2O5), uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 12024-21-4, Gallium oxide (Ga2O3) 12036-41-8, Terbium oxide (Tb2O3) 12036-44-1, Thulium oxide (Tm2O3) 12055-62-8, Holmium oxide (Ho2O3) 12057-24-8, Lithium oxide (Li2O), uses 12060-58-1, Samarium oxide (Sm2O3) 12061-16-4, Erbium oxide (Er2O3) 12064-62-9, Gadolinium oxide (Gd2O3) 13463-67-7, Titania, uses
RL: DEV (Device component use); USES (Uses)
(glass-ceramic; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

IT 10377-52-3 12024-22-5, Gallium sulfide ga2s3 12025-34-2, Germanium sulfide ges2 12136-58-2, Lithium sulfide (Li2S) 13759-10-9, Silicon sulfide sis2
RL: DEV (Device component use); USES (Uses)
(glass; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

IT 79-20-9, Methyl acetate 96-47-9, 2-Methyltetrahydrofuran 105-58-8, Diethyl carbonate 107-31-3, Methyl formate 109-99-9, Thf, uses 110-71-4, 1,2-Dimethoxyethane 463-79-6D, Carbonic acid, org. esters 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 646-06-0, 1,3-Dioxolane 1072-47-5, 1,3-Dioxolane, 4-methyl- 1313-13-9, Manganese dioxide, uses 1313-27-5, Molybdenumoxide moo3, uses 1314-62-1, Vanadium oxide (V2O5), uses 1317-37-9, Iron sulfide Fes 1317-38-0, Copper oxide (CuO), uses 1317-40-4, Copper sulfide Cus 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compd. 7447-41-8, Lithium chloride (LiCl), uses 7550-35-8, Lithium bromide (LiBr) 7704-34-9, Sulfur, uses 7784-01-2, Silver chromate 7789-24-4, Lithium fluoride, uses 9004-67-5, Methyl cellulose 10377-51-2, Lithium iodide 11105-02-5, Silver vanadium oxide 12037-42-2, Vanadium oxide v6o13 12039-13-3, Titanium sulfide (TiS2) 12057-29-3, Lithium phosphide li3p 12068-85-8, Iron sulfide fes2 12789-09-2, Copper vanadium oxide 15365-14-7, Iron lithium phosphate felipo4 16969-45-2D, Pyridinium, derivs. 17009-90-4D, Imidazolium, derivs. **24937-79-9**, Pvdf **25014-41-9**, Polyacrylonitrile 25322-68-3, Peo 26134-62-3, Lithium nitride (Li3N) 39300-70-4, Lithium nickeloxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide 70780-99-3, Lisicon 77641-62-4, Nasicon 155371-19-0, 1-Ethyl-3-methylimidazolium hexafluorophosphate 184905-46-2, Lithium nitrogen phosphorus oxide 244193-50-8, 1-Hexyl-3-methylimidazolium tetrafluoroborate 328090-25-1 445473-58-5, 1-Butyl-3-methylimidazolium octyl sulfate
RL: DEV (Device component use); USES (Uses)
(ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

IT 7440-50-8, Copper, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; ionically conductive membranes for protection of active **metal anodes** and **battery** cells)

IT 11138-49-1, Sodium β-alumina 37220-89-6, Lithium β-alumina
RL: DEV (Device component use); USES (Uses)
(β-alumina type; ionically conductive membranes for

protection of active **metal anodes** and **battery** cells)

L85 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:203430 HCAPLUS
DOCUMENT NUMBER: 140:238482
TITLE: Nonaqueous thin-**film** layer electrode **battery**
INVENTOR(S): Omaru, Atsuo
PATENT ASSIGNEE(S): Sony Corporation, Japan
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004048160	A1	20040311	US 2003-660807	200309 11
JP 2004103476	A2	20040402	JP 2002-265952 <--	200209 11
CN 1495940	A	20040512	CN 2003-164810	200309 11
PRIORITY APPLN. INFO.:			JP 2002-265952 A <--	200209 11

AB Disclosed is a **battery** which is improved in cyclic characteristics at the same time as the **battery** capacity is increased. On an **anode substrate**, there is formed, by a thin **film** forming technique, a layer of the active material, contg. a **metal** that may be alloyed with lithium as an **anode** active material. The **battery** includes an **anode** contg. one or more of a **metal** not alloyed with lithium, an alloy or a compd. contg. the **metal**, and a carbonaceous material capable of doping/undoping lithium ions, as well as the **metal** that may be alloyed with lithium, a cathode 6 and a nonaq. liq. electrolyte 4. The **metal** contained in the **anode** as an **anode** active material and which may be alloyed with lithium acts to raise the **battery** capacity, while the **metal** not alloyed with lithium, alloys or compds. of this **metal** or the carbonaceous material suppresses deterioration of the **anode** attendant on the charging/discharging to improve cyclic characteristics.

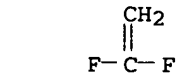
IT **24937-79-9**, Pvdf
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7

CMF C2 H2 F2



IC ICM H01M004-58
ICS H01M004-66; H01M004-40
INCL 429231400; 429231950; 429234000; 429245000; 429094000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST nonaq thin **film** layer electrode **battery**
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nitrogen-contg.; nonaq. thin-**film** layer electrode **battery**)
IT **Battery anodes**
Secondary **batteries**
(nonaq. thin-**film** layer electrode **battery**)
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)
IT Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)
IT Polyolefins
RL: TEM (Technical or engineered material use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)
IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(sulfur-contg.; nonaq. thin-**film** layer electrode **battery**)
IT 7429-90-5, Aluminum, uses 7439-92-1, Lead, uses 7439-95-4, Magnesium, uses 7440-21-3, Silicon, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-32-6, Titanium, uses 7440-36-0, Antimony, uses 7440-42-8, Boron, uses 7440-43-9, Cadmium, uses 7440-55-3, Gallium, uses 7440-56-4, Germanium, uses 7440-58-6, Hafnium, uses 7440-66-6, Zinc, uses 7440-67-7, Zirconium, uses 7440-69-9, Bismuth, uses 7440-74-6, Indium, uses 12003-67-7, Aluminum lithium oxide allio2 12022-46-7, Iron lithium oxide felio2 12031-65-1, Lithium nickel oxide linio2 12057-19-1, Lithium titanium oxide litio2 12162-79-7, Lithium manganese oxide limno2 12162-87-7, Lithium vanadium oxide livo2 12190-79-3, Cobalt lithium oxide colio2
RL: DEV (Device component use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)
IT **24937-79-9**, Pvdf
RL: MOA (Modifier or additive use); USES (Uses)
(nonaq. thin-**film** layer electrode **battery**)

L85 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:971364 HCAPLUS
DOCUMENT NUMBER: 140:29506
TITLE: Lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaqueous electrochemical cell and **battery** with increased energy density

INVENTOR(S): Marple, Jack W.
PATENT ASSIGNEE(S): Eveready Battery Company, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003228518	A1	20031211	US 2002-164239	20020605
US 6849360	B2	20050201		
CA 2487539	AA	20031218	CA 2003-2487539	20030605
			<--	
WO 2003105255	A2	20031218	WO 2003-US17728	20030605
			<--	
WO 2003105255	A3	20041104		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1518287	A2	20050330	EP 2003-757346	20030605
			<--	
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
JP 2005529467	T2	20050929	JP 2004-512221	20030605
			<--	
US 2005084756	A1	20050421	US 2004-977775	20041029
			<--	
PRIORITY APPLN. INFO.:			US 2002-164239 A	20020605
			<--	
			WO 2003-US17728 W	20030605

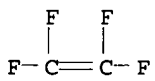
AB A nonaq. electrochem. cell with high energy d., high discharge rate, and **anode** underbalance, comprises a lithium **metal** foil **anode** and a cathode **coating** comprised of

iron disulfide (e.g., pyrite) as the active material, in which the **coating** is applied to at least one surface of a metallic **substrate** that functions as the cathode current collector. The lithium **metal** foil **anode** is preferably alloyed with aluminum, in which the **anode**-cathode input ratio is ≤1.0:1. The iron disulfide cathode **coating** is further composed of synthetic graphite (with mean particle size 3.0-11.0 μ, a BET surface area 3.0-11.0 m2/g, and di-Bu phthalate adsorption capacity of 160-200%), further contains acetylene black, micronized PTFE powder, fumed silica, and styrene-ethylene-butylene-styrene block copolymer. The volumetric and gravimetric energy d. for the cell can be improved by .apprx.20-25% while only increasing the vol. of the cathode **coating** solids by .apprx.10% through a unique and novel cathode **coating** formulation used in conjunction with an alloyed lithium foil.

IT **9002-84-0**, Polytetrafluoroethylene
RL: DEV (Device component use); USES (Uses)
(pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

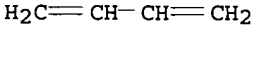
CRN 116-14-3
CMF C2 F4



IT **106107-54-4 694491-73-1**
RL: DEV (Device component use); USES (Uses)
(styrene-butadiene rubber, hydrogenated, block, triblock, hydrogenated, rubber, pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
RN 106107-54-4 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene, block (9CI) (CA INDEX NAME)

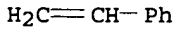
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

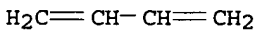
CRN 100-42-5
CMF C8 H8



RN 694491-73-1 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene, triblock (9CI) (CA INDEX NAME)

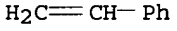
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



IC ICM H01M004-58
ICS H01M004-62; H01M004-40
INCL 429221000; 429231950; 429217000; 429232000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium **anode** iron disulfide cathode **coating** **battery**; electrochem cell lithium **anode** iron disulfide cathode **coating**; pyrite cathode **coating** lithium secondary **battery**; aluminum lithium alloy **anode** secondary **battery**
IT **Coating** materials
(cathodic; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
IT Styrene-butadiene rubber, uses
RL: DEV (Device component use); USES (Uses)
(hydrogenated, block, triblock, hydrogenated, rubber, pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
IT Styrene-butadiene rubber, uses
RL: DEV (Device component use); USES (Uses)
(hydrogenated, block, triblock, pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
IT **Battery** cathodes
(iron disulfide; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
IT **Battery anodes**
(lithium-aluminum alloys; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)
IT Carbon black, uses

Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

IT 1309-36-0, Pyrite, uses 12068-85-8, Iron disulfide (FeS2)
RL: DEV (Device component use); USES (Uses)
(**coating**, cathodes; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

IT 7439-93-2, Lithium, uses 72785-69-4 246148-36-7 632287-11-7 632287-12-8
RL: DEV (Device component use); USES (Uses)
(foil, **anodes**; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

IT 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(fumed, pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

IT 7782-42-5, Graphite, uses **9002-84-0**, Polytetrafluoroethylene
RL: DEV (Device component use); USES (Uses)
(pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

IT **106107-54-4 694491-73-1**
RL: DEV (Device component use); USES (Uses)
(styrene-butadiene rubber, hydrogenated, block, triblock, hydrogenated, rubber, pyrite cathode **coating** contg.; lithium alloy **anode** and iron disulfide (pyrite) cathode for nonaq. electrochem. cell and **battery** with increased energy d.)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L85 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:874844 HCAPLUS
DOCUMENT NUMBER: 139:340080
TITLE: Very low emission hybrid electric vehicle incorporating an integrated propulsion system including a fuel cell and a high power nickel **metal** hydride **battery** pack
INVENTOR(S): Ovshinsky, Stanford R.; Stempel, Robert C.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 43 pp., Cont.-in-part of U.S. Ser. No. 315,669.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 16
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2003207156	A1	20031106	US 2003-419486	200304 21

<--

US 6492056	B1	20021210	US 2000-687717	200010 13
			<--	
US 2003129459	A1	20030710	US 2002-315669	200212 09
			<--	
PRIORITY APPLN. INFO.:			US 2000-687717 A2	200010 13
			<--	
			US 2002-315669 A2	200212 09
			<--	
			US 2000-524116 A2	200003 13
			<--	

AB The invention concerns a very low emission hybrid elec. vehicle incorporating an integrated propulsion system which includes a fuel cell, a **metal** hydride hydrogen storage unit, an elec. motor, high specific power, high energy d. nickel-**metal** hydride (NiMH) **batteries**, and preferably a regenerative braking system. The nickel-**metal** hydride **battery** module preferably has a peak power d. in relation to energy d. as defined by: P >1.375-15 E, where P is >600 W/kg, where P is the peak power d. as measured in Watts/kg and E is the energy d. as measured in W-h/kg.

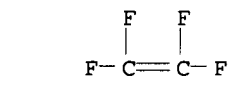
IT **9002-84-0**, Ptfe
RL: MOA (Modifier or additive use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

RN 9002-84-0 HCAPLUS

CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M010-46
ICS H01M016-00; B60L011-18

INCL 429009000; 320101000; 180065300

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56, 59, 72

ST fuel cell **battery** integrated propulsion system vehicle low emission

IT Alloys, uses
RL: DEV (Device component use); USES (Uses)
(Ovonic; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT Fuel cells
(alk.; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Metallic fibers
RL: MOA (Modifier or additive use); USES (Uses)
(copper; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Fuel cells
(molten carbonate; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Metallic fibers
RL: MOA (Modifier or additive use); USES (Uses)
(nickel; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Fuel cells
(phosphoric acid; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Fuel cells
(solid electrolyte, proton exchange membrane; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Fuel cells
(solid oxide; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT **Battery anodes**
Coolants
Electric vehicles
Electrolytic cells
Environmental pollution control
Secondary **batteries**
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Polyamides, uses
Rare earth alloys
RL: DEV (Device component use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Fluoropolymers, uses
RL: MOA (Modifier or additive use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Copper alloy, base
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)
IT Misch **metal** alloy, base
Titanium alloy, base

Zirconium alloy, base
RL: DEV (Device component use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 7440-02-0, Nickel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Cu-**coated**, **substrate**; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 9002-88-4, Polyethylene
RL: DEV (Device component use); USES (Uses)
(grafted; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 7440-50-8, Copper, uses 11101-28-3
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 51401-75-3
RL: CAT (Catalyst use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 152320-33-7 180609-78-3 430470-92-1 430470-94-3 430470-95-4 430470-97-6 430470-99-8 616884-40-3
RL: DEV (Device component use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

IT 7429-90-5, Aluminum, uses 7439-95-4, Magnesium, uses 7439-98-7, Molybdenum, uses 7440-21-3, Silicon, uses 7440-32-6, Titanium, uses 7440-62-2, Vanadium, uses 7440-67-7, Zirconium, uses 7782-42-5, Graphite, uses **9002-84-0**, Ptfe
RL: MOA (Modifier or additive use); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

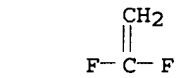
IT 1333-74-0P, Hydrogen, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(very low emission hybrid elec. vehicle incorporating integrated propulsion system including fuel cell and high power nickel **metal** hydride **battery** pack)

L85 ANSWER 5 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:483076 HCAPLUS
DOCUMENT NUMBER: 139:232953
TITLE: Effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on the mechanical strength of the composite **anode** in a lithium ion **battery**
AUTHOR(S): Yoo, Mikyong; Frank, Curtis W.; Mori, Shoichiro; Yamaguchi, Shoji
CORPORATE SOURCE: Department of Materials Science and Engineering, Stanford University, Stanford, CA, 94305, USA
SOURCE: Polymer (2003), 44(15), 4197-4204
CODEN: POLMAG; ISSN: 0032-3861

PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The authors have evaluated the mech. strength of composites consisting of carbon particles bound together by poly(vinylidene fluoride) (PVDF), which is closely related to the carbonaceous **anode** in a lithium ion **battery**. The authors used a balanced beam scrape adhesion tester and evaluated the influence of carbon particle structure, the chem. properties of PVDF, and the processing parameters of annealing temp. and casting solvent on the adhesion of the composite **film** to a copper **substrate**. The composite prepd. with amorphous carbon shows over 10 times higher adhesion strength than those fabricated from other graphite materials. This results from chem. binding that is intermediate between semi-ionic and covalent C-F bonds, as detected by XPS. To address the effect of the cryst. phase of the binder on the adhesion strength, the authors studied PVDF crystallinity in the composite **films** using DSC. Samples with higher crystallinity show higher adhesion strength, independent of annealing temp. and casting solvent. The scratch adhesion was also measured for swollen electrodes immersed in 3:7 vol. ratio of ethylene carbonate:ethyl Me carbonate (EC:EMC) at different temps. After being swollen, the composite **films** prepd. from PVDF modified with hydroxyl functional groups show higher adhesion strengths than the others due to their low uptake of the electrolyte solvent.
IT **24937-79-9**, PVDF
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(KF 1300, Kynar 301F MKB212A, composite with carbon, **anode**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST poly vinylidene fluoride binder crystallinity graphite adhesive strength composite; **battery anode** carbon PVDF adhesion XPS carbonate electrolyte swelling
IT Fluoropolymers, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(KF 1300, Kynar 301F MKB212A, composite with carbon, **anode**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)
IT Swelling, physical
(effect of OH- functionality on; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Annealing
Battery anodes
Composites
Crystal structure
X-ray photoelectron spectra
(effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Solvents
(effect on composite **film** casting; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Hydroxyl group
(effect on solvent swelling and adhesion of composite **films**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Casting of polymeric materials
(**film**, solvent effect on; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Adhesion, physical
(interfacial, of composite **film** to copper, relationship to crystallinity and OH functionality of PVDF phase; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT Surface **roughness**
(relationship to crystallinity of PVDF phase; surface **roughness** of composite **films**, normalized to carbon particle size)

IT Crystallinity
(relationships of crystallinity of PVDF phase in composites to normalized surface **roughness** and adhesive strength to copper)

IT **24937-79-9**, PVDF
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(KF 1300, Kynar 301F MKB212A, composite with carbon, **anode**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(MBC-N, amorphous, composite with PVDF, **anode**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); PRP (Properties); USES (Uses)
(MPG-V2, MCMB, SFG75, SFG44, SFG15, KS15, KS6, composite with PVDF, **anode**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT 7440-50-8, Copper, uses
RL: DEV (Device component use); USES (Uses)
(current collector **substrate**; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)

IT 96-49-1, Ethylene carbonate 623-53-0, Ethyl methyl carbonate

RL: DEV (Device component use); USES (Uses)
(electrolyte; effect of poly(vinylidene fluoride) binder crystallinity and graphite structure on mech. strength of composite **anode** in lithium ion **battery**)
REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L85 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:172051 HCAPLUS
DOCUMENT NUMBER: 138:224145
TITLE: **Anode** for secondary lithium **battery**, its manufacture, and the **battery**
INVENTOR(S): Moriuchi, Takeshi
PATENT ASSIGNEE(S): Mitsubishi Cable Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003068284	A2	20030307	JP 2001-256863	200108 27
			<--	
PRIORITY APPLN. INFO.:			JP 2001-256863	200108 27
			<--	

AB The **anode** is prepd. by applying a mixed paste contg. an active mass and a polymer binder on a **metal** foil to form a **film**, and rolling the **film** followed by heating. The **anode** has the above paste layer on the **metal** foil; where in the thickness direction of the paste layer, the packing d. of the highest portion is 100-120 % of the lowest portion. The **battery** using the above **anode**, has high initial charge/discharge efficiency and long cycle life.
IT **24937-79-9**, PVDF
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2

IC ICM H01M004-02

ICS H01M004-04; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery anode** manuf uniform packing density **coating**
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)
IT **Battery anodes**
(manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)
IT 7782-42-5, Graphite, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(active mass; manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)
IT **24937-79-9**, PVDF
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)
IT 7440-50-8, Copper, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of **anodes** contg. active mass layers with controlled uniform packing d. on **metal substrates** for secondary lithium **batteries**)

L85 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:556004 HCAPLUS
DOCUMENT NUMBER: 137:127542
TITLE: Very low emission hybrid electric vehicle incorporating an integrated propulsion system including a hydrogen powered internal combustion engine and a high power Ni-MH **battery** pack
INVENTOR(S): Ovshinsky, Stanford R.; Stempel, Robert C.
PATENT ASSIGNEE(S): Ovonic Battery Co., Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Ser. No. 989,340.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002098414	A1	20020725	US 2001-963864	200109 25
			<--	
US 6565836	B2	20030520		
US 5851698	A	19981222	US 1997-792359	199701 31
			<--	
US 5856047	A	19990105	US 1997-792358	199701

31
<--
TW 494072 B 20020711 TW 1998-87119352
199812
04
<--
WO 2003026907 A2 20030403 WO 2002-US30119
200209
23
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WO 2003026907 A3 20040304
W: AU, BR, CA, CN, IN, JP, KR, MX, NO, RU, SG, UA, US
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE,
IT, LU, MC, NL, PT, SE, SK, TR
US 2003157045 A1 20030821 US 2002-310220
200212
05
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US 6759034 B2 20040706
PRIORITY APPLN. INFO.: US 1997-792358 A2
199701
31
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US 1997-792359 A2
199701
31
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US 1997-979340 A2
199711
24
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US 2001-963864 A
200109
25
<--

AB A very-low-emission hybrid elec. vehicle incorporates an integrated propulsion that comprises a hydrogen-powered internal combustion engine, a **metal** hydride unit for storage of H2, an elec. motor, high-specific-power high-energy-d. nickel-**metal** hydride (NiMH) **batteries**, and preferably a regenerative braking system. The hydrogen-powered internal-combustion engine uses hydrogen supplied from the H2 storage unit to provide either electricity (to recharge the **batteries**) or to propel the vehicle. Waste heat from the engine can be used to provide the required heat for releasing hydrogen from the H2 storage unit. The NiMH **batteries** have **neg. electrodes** with **substrates** to enhance the power delivery capability of the **battery** and to maintain max. operating efficiency during charging and discharging cycling, while maintaining a combination of energy d. and power d. The nickel-**metal** hydride **battery** module preferably has a peak power d., P, in relation to energy d., E, as defined by: P > 1420-16E, in which P >600 W/kg and E is measured in Watt-hours/kg.

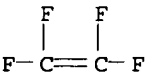
IT **9002-84-0**, Poly(tetrafluoroethylene)
RL: NUU (Other use, unclassified); USES (Uses)
(hydrophobic material, for rechargeable **batteries**; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

RN 9002-84-0 HCAPLUS

CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-52
ICS B60K006-02
INCL 429223000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST nickel **metal** hydride **battery** hybrid elec vehicle; hydrogen engine **metal** hydride **battery** hybrid elec vehicle; regenerative braking hybrid elec vehicle
IT Electric vehicles
(automobiles, hybrid; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Brakes (mechanical)
(automotive, regenerative; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Metallic fibers
RL: NUU (Other use, unclassified); USES (Uses)
(copper, nickel-plated, rechargeable **battery** cathodes contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Automobiles
(elec., hybrid; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Engines
(hydrogen-fueled, internal-combustion; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Alloys, uses
RL: NUU (Other use, unclassified); USES (Uses)
(hydrogen-storage; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Fluoropolymers, uses
RL: NUU (Other use, unclassified); USES (Uses)
(hydrophobic material, for rechargeable **batteries**; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)
IT Metallic fibers

RL: NUU (Other use, unclassified); USES (Uses)
(nickel, rechargeable **battery** cathodes contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT Rare earth alloys
RL: NUU (Other use, unclassified); USES (Uses)
(nickel-, hydrogen storage alloys contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT Secondary **batteries**
(nickel-**metal** hydride; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT Secondary **battery** separators
(polyolefins; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT **Battery anodes**
Battery cathodes
(rechargeable; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT Hydrides
RL: NUU (Other use, unclassified); USES (Uses)
(very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT Copper alloy, base
RL: NUU (Other use, unclassified); USES (Uses)
(**battery anodes** contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 7782-42-5, Graphite, uses 94337-31-2 152320-33-7 444046-24-6 444046-25-7
RL: NUU (Other use, unclassified); USES (Uses)
(**battery anodes** contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 9002-88-4, Polyethylene 9003-07-0, Polypropylene
RL: NUU (Other use, unclassified); USES (Uses)
(**battery** separators; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 1333-74-0, Hydrogen, uses
RL: NUU (Other use, unclassified); USES (Uses)
(fuel; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 444046-26-8 444046-27-9 444046-28-0 444046-29-1
RL: NUU (Other use, unclassified); USES (Uses)
(hydrogen storage alloy contg.; very-low-emission hybrid elec.

vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 11123-80-1, Titanium alloy, Ti,Fe 11137-32-9, Titanium alloy, Ti,Zr 12618-08-5
RL: NUU (Other use, unclassified); USES (Uses)
(hydrogen storage alloys contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT **9002-84-0**, Poly(tetrafluoroethylene)
RL: NUU (Other use, unclassified); USES (Uses)
(hydrophobic material, for rechargeable **batteries**; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 7440-50-8, Copper, uses
RL: NUU (Other use, unclassified); USES (Uses)
(particles, **coatings**, or flakes; **battery anodes** contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 7440-02-0, Nickel, uses
RL: NUU (Other use, unclassified); USES (Uses)
(particles, flakes, or **coatings**; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 37187-84-1, Nickel hydride
RL: NUU (Other use, unclassified); USES (Uses)
(rechargeable **batteries**; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

IT 12054-48-7, Nickel hydroxide (Ni(OH)2)
RL: NUU (Other use, unclassified); USES (Uses)
(rechargeable **battery** cathodes contg.; very-low-emission hybrid elec. vehicle incorporating an integrated propulsion system including a hydrogen-powered internal combustion engine and a high power Ni-MH **battery** pack)

L85 ANSWER 8 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:213725 HCAPLUS
DOCUMENT NUMBER: 136:234745
TITLE: Rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator
INVENTOR(S): Chen, Muguo; Li, Lin-Feng; Tsai, Tsepin
PATENT ASSIGNEE(S): Reveo, Inc., USA
SOURCE: U.S., 17 pp., Cont.-in-part of U.S. Ser. No. 259,068.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 5
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

US 6358651 B1 20020319 US 2000-482126
200001
11
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US 2003099872 A1 20030529 US 1999-259068
199902
26
US 6605391 B2 20030812
TW 463405 B 20011111 TW 2000-89103224
200002
24
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CA 2362298 AA 20000831 CA 2000-2362298
200002
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WO 2000051198 A2 20000831 WO 2000-US4881
200002
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WO 2000051198 A3 20010111
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR,
CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU,
ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,
LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU,
SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ,
VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF,
BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
EP 1155467 A2 20011121 EP 2000-913617
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R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC,
PT, IE, SI, LT, LV, FI, RO
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US 6849702 B2 20050201
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US 2002102465 A1 20020801 US 2001-13016
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US 2003022047	A1	20030130	US 2002-186439	200207 01
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PRIORITY APPLN. INFO.:	US 1999-259068	A2	199902 26
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	US 2000-482126	A	200001 11
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	WO 2000-US4881	W	200002 25
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	US 2001-301558P	P	200106 28
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	US 2001-942887	A2	200108 30
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	US 2001-943053	A2	200108 30
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	US 2001-13016	A2	200111 30
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	US 2002-382926P	P	200205 23
	<--		

AB Rechargeable electrochem. cells that employ a highly conductive polymer-based solid gel membrane separator disposed between the **anode** and charging electrode are disclosed. The separator comprises a support or **substrate** and a polymeric gel compn. having an ionic species contained in a soln. phase thereof. In prepg. the separator, the ionic species is added to a monomer soln. prior to polymn. and remains embedded in the resulting polymer gel after polymn. The ionic species behaves like a liq. electrolyte, while at the same time, the polymer-based solid gel membrane provides a smooth impenetrable surface that allows the exchange of ions for both discharging and charging of the cell. Advantageously, the separator reduces dendrite penetration and prevents the diffusion of reaction products such as **metal** oxide to remaining parts of the cell. Furthermore, the measured ionic cond. of the separator is much higher than those of prior art solid electrolytes or electrolyte-polymer **films.** The disclosed rechargeable electrochem. cells include, for example, **metal**/air, Zn/Ni, Zn/MnO2, Zn/AgO, Fe/Ni, and lead-acid

systems.

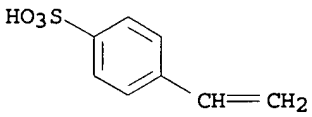
IT **403713-49-5 403713-50-8**
RL: DEV (Device component use); USES (Uses)
(rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

RN 403713-49-5 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, polymer with N,N'-methylenebis[2-propenamide], 2-propenamide and sodium 4-ethenylbenzenesulfonate (9CI) (CA INDEX NAME)

CM 1

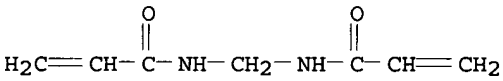
CRN 2695-37-6
CMF C8 H8 O3 S . Na



● Na

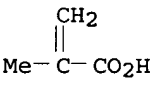
CM 2

CRN 110-26-9
CMF C7 H10 N2 O2



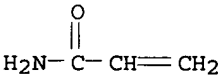
CM 3

CRN 79-41-4
CMF C4 H6 O2



CM 4

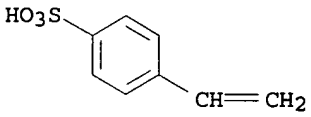
CRN 79-06-1
CMF C3 H5 N O



RN 403713-50-8 HCAPLUS
CN 2-Propenoic acid, polymer with 1-ethenyl-2-pyrrolidinone, N,N'-methylenebis[2-propenamide] and sodium 4-ethenylbenzenesulfonate (9CI) (CA INDEX NAME)

CM 1

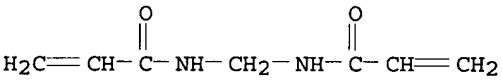
CRN 2695-37-6
CMF C8 H8 O3 S . Na



● Na

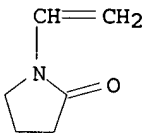
CM 2

CRN 110-26-9
CMF C7 H10 N2 O2



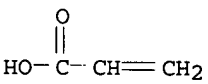
CM 3

CRN 88-12-0
CMF C6 H9 N O



CM 4

CRN 79-10-7
CMF C3 H4 O2

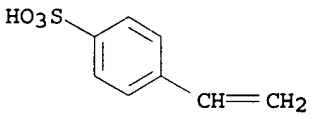


IT **25704-18-1**, Poly(sodium 4-styrenesulfonate)

104983-61-1, Maleic acid-styrenesulfonic acid copolymer, sodium salt
RL: DEV (Device component use); USES (Uses)
(reinforcing element; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
RN 25704-18-1 HCAPLUS
CN Benzenesulfonic acid, 4-ethenyl-, sodium salt, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2695-37-6
CMF C8 H8 O3 S . Na



● Na

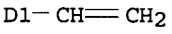
RN 104983-61-1 HCAPLUS
CN 2-Butenedioic acid (2Z)-, polymer with ethenylbenzenesulfonic acid, sodium salt (9CI) (CA INDEX NAME)

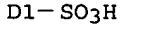
CM 1

CRN 78145-90-1
CMF (C8 H8 O3 S . C4 H4 O4)x
CCI PMS

CM 2

CRN 26914-43-2
CMF C8 H8 O3 S
CCI IDS

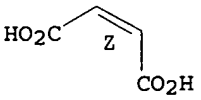




CM 3

CRN 110-16-7
CMF C4 H4 O4

Double bond geometry as shown.



IC ICM H01M002-16
INCL 429303000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST **battery** rechargeable separator polymer based gel membrane
IT Peroxysulfates
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(alkali **metal** salts, polymn. initiator; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Polysulfones, uses
RL: DEV (Device component use); USES (Uses)
(anionic, copolymers contgn. reinforcing element; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Perovskite-type crystals
(charging electrode; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Secondary **batteries**
(lead-acid; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Polymerization
(photopolymn.; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Peroxides, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polymn. initiator; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Polymerization
Polymerization
(radiochem.; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Electrochromic devices
Electrochromic materials
Secondary **batteries**
Secondary **battery** separators
(rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT Polyamides, uses
Polyolefins
RL: TEM (Technical or engineered material use); USES (Uses)
(support; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT 1313-99-1, Nickel oxide, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(charging electrode; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)
IT 9005-25-8, Starch, uses
RL: DEV (Device component use); USES (Uses)

(corn, reinforcing element; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

IT 7727-54-0, Ammonium persulfate
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(polymn. initiator; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

IT 79-06-1D, Acrylamide, copolymer derivs. 79-41-4D, Methacrylic acid, copolymer derivs. 110-26-9D, Methylenebisacrylamide, copolymer derivs. 1301-96-8, Silver oxide ago 1307-96-6, Cobalt oxide, uses 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses 1313-13-9, Manganese dioxide, uses 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-95-4, Magnesium, uses 7440-43-9, Cadmium, uses 7440-66-6, Zinc, uses 7601-90-3, Perchloric acid, uses 7647-01-0, Hydrochloric acid, uses 7647-14-5, Sodium chloride, uses 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses 7778-80-5, Potassium sulfate, uses 12125-02-9, Ammonium chloride, uses 30280-72-9, Acrylic acid-methylenebisacrylamide copolymer 34364-92-6, Acrylamide-methylenebisacrylamide-1-vinyl-2-pyrrolidinone copolymer 97917-26-5, Acrylamide-methacrylic acid-methylenebisacrylamide copolymer **403713-49-5** **403713-50-8**
RL: DEV (Device component use); USES (Uses)
(rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

IT 10117-38-1, Potassium sulfite
RL: RCT (Reactant); RACT (Reactant or reagent)
(reducing agent; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

IT 9000-11-7, Cmc **25704-18-1**, Poly(sodium 4-styrenesulfonate) **104983-61-1**, Maleic acid-styrenesulfonic acid copolymer, sodium salt
RL: DEV (Device component use); USES (Uses)
(reinforcing element; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

IT 9002-89-5, Polyvinyl alcohol 9004-34-6, Cellulose, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(support; rechargeable **batteries** using ionic-conducting polymer-based solid gel membrane separator)

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L85 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:66768 HCAPLUS
DOCUMENT NUMBER: 136:105161
TITLE: Method for preparation of thin alkali **metal film** member for use in **battery**
INVENTOR(S): Kugai, Hirokazu; Ota, Nobuhiro; Yamanaka, Shosaku
PATENT ASSIGNEE(S): Sumitomo Electric Industries, Ltd., Japan
SOURCE: Eur. Pat. Appl., 9 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

EP 1174936	A2	20020123	EP 2001-306241	200107 19 <--
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2002097564	A2	20020402	JP 2000-382174	200012 15 <--
JP 3608507	B2	20050112		
CA 2350384	AA	20020119	CA 2001-2350384	200106 13 <--
US 2002028383	A1	20020307	US 2001-884632	200106 18 <--
US 6713216	B2	20040330		
CN 1333574	A	20020130	CN 2001-123142	200107 17 <--

PRIORITY APPLN. INFO.: JP 2000-219071 A 200007 19 <--
JP 2000-382174 A 200012 15 <--

AB A member having a lithium **metal** thin **film** is provided, which is extremely thin, uniform, and not degraded by air. The member includes a **substrate** and a thin lithium **metal film** formed on the **substrate** by a vapor deposition method. The thin **film** typically has a thickness of 0.1 μm to 20 μm. The **substrate** is typically made of a **metal**, an alloy, a **metal** oxide, or carbon. The **substrate** typically has a thickness of 1 μm to 100 μm. The member is used as an electrode member for a lithium cell.

IT **25014-41-9**, Polyacrylonitrile
RL: DEV (Device component use); USES (Uses)
(method for prepn. of thin alkali **metal film** member for use in **battery**)

RN 25014-41-9 HCAPLUS
CN 2-Propenenitrile, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 107-13-1
CMF C3 H3 N

$H_2C{=}CH{-}C{\equiv}N$

IC ICM H01M004-38
ICS H01M004-40; H01M004-02; C23C014-16

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** use alkali **metal film** prepn; lithium **film** prepn **battery** use
IT Alloys, uses
RL: DEV (Device component use); USES (Uses)
(alkali **metal**; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Alkali **metals**, uses
RL: DEV (Device component use); USES (Uses)
(alloys; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Vapor deposition process
(ion plating; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Secondary **batteries**
(lithium; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT **Battery anodes**
Films
Laser ablation
Sputtering
(method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Alkali **metals**, uses
RL: DEV (Device component use); USES (Uses)
(method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Alloys, uses
Metals, uses
Oxides (inorganic), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT Evaporation
(vacuum; method for prepn. of thin alkali **metal film** member for use in **battery**)
IT 96-49-1, Ethylene carbonate 108-32-7, Propylene carbonate 12190-79-3, Cobalt lithium oxide colio2 21324-40-3, Lithium hexafluorophosphate **25014-41-9**, Polyacrylonitrile 389119-18-0D, Lithium sulfide thiosilicate (Li0.43S0.08(SiS3)0.12), solid soln. phophate contg. 389119-19-1D, Lithium sulfide thiosilicate (Li0.4S0.08(SiS3)0.13), solid soln. phophate contg. 389119-20-4D, Lithium sulfide thiosilicate (Li0.41S0.06(SiS3)0.13), solid soln. phophate contg.
RL: DEV (Device component use); USES (Uses)
(method for prepn. of thin alkali **metal film** member for use in **battery**)
IT 7439-90-9, Krypton, uses 7440-01-9, Neon, uses 7440-37-1, Argon, uses 7440-59-7, Helium, uses 7727-37-9, Nitrogen, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(method for prepn. of thin alkali **metal film** member for use in **battery**)
IT 7429-90-5, Aluminum, uses 7439-89-6, Iron, uses 7439-95-4, Magnesium, uses 7440-02-0, Nickel, uses 7440-03-1, Niobium, uses 7440-06-4, Platinum, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-33-7, Tungsten, uses 7440-44-0, Carbon, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-74-6, Indium, uses 7782-42-5, Graphite, uses 11109-50-5, Sus 304 12597-68-1, Stainless steel, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; method for prepn. of thin alkali

metal film member for use in **battery**)

L85 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:47909 HCAPLUS
DOCUMENT NUMBER: 136:105114
TITLE: Hydrogen absorbing alloy **anode** and secondary alkaline **battery**
INVENTOR(S): Endo, Masahiro
PATENT ASSIGNEE(S): Toshiba Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002015730	A2	20020118	JP 2000-195970	200006 29

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PRIORITY APPLN. INFO.: JP 2000-195970 200006 29

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AB The **battery** has a H absorbing alloy **anode**, which has a H absorbing alloy powder layer pressed on a ≤40 μm thick conductive **substrate**, prepd. by rolling **metal** powder, and a binder layer on top of the alloy layer.

IT **9003-55-8**
RL: DEV (Device component use); USES (Uses)
(styrene-butadiene rubber, carboxyl modified; hydrogen absorbing **anodes** contg. powder rolled nickel **substrates** and adhesive **coatings** for **batteries**)

RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6

$H_2C{=}CH{-}CH{=}CH_2$

CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM H01M004-24
ICS H01M010-30
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery** hydrogen absorbing **anode** power rolling **substrate**; adhesive **coating** hydrogen absorbing alloy **anode battery**

IT Styrene-butadiene rubber, uses
RL: DEV (Device component use); USES (Uses)
(carboxyl modified; hydrogen absorbing **anodes** contg. powder rolled nickel **substrates** and adhesive **coatings** for **batteries**)

IT **Battery anodes**
(hydrogen absorbing **anodes** contg. powder rolled **metal substrates** and adhesive **coatings** for **batteries**)

IT Carbon black, uses
RL: DEV (Device component use); USES (Uses)
(hydrogen absorbing **anodes** contg. powder rolled nickel **substrates** and adhesive-carbon **coatings** for **batteries**)

IT 1333-74-0, Hydrogen, uses 190263-18-4
RL: DEV (Device component use); USES (Uses)
(hydrogen absorbing **anodes** contg. powder rolled **metal substrates** and adhesive **coatings** for **batteries**)

IT 7440-02-0, Nickel, uses
RL: DEV (Device component use); USES (Uses)
(hydrogen absorbing **anodes** contg. powder rolled nickel **substrates** and adhesive **coatings** for **batteries**)

IT **9003-55-8**
RL: DEV (Device component use); USES (Uses)
(styrene-butadiene rubber, carboxyl modified; hydrogen absorbing **anodes** contg. powder rolled nickel **substrates** and adhesive **coatings** for **batteries**)

L85 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:31811 HCAPLUS
DOCUMENT NUMBER: 136:72352
TITLE: **Anode** plate for lithium secondary cell and method for manufacture thereof
INVENTOR(S): Mori, Mitsuhiro; Shirakata, Masato; Iriyama, Jiro; Miura, Tamaki; Yamamoto, Hironori; Utsugi, Koji
PATENT ASSIGNEE(S): Nec Corporation, Japan
SOURCE: PCT Int. Appl., 16 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002003485	A1	20020110	WO 2001-JP5350	200106 22
			<--	
W: KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2002015728	A2	20020118	JP 2000-198221	200006 30

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US 2003180608 A1 20030925 US 2002-312625 200212 27

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US 6818353 B2 20041116

PRIORITY APPLN. INFO.: JP 2000-198221 A 200006 30

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WO 2001-JP5350 W 200106 22

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AB The invention relates to a lithium secondary cell having a **neg. electrode** comprising a lithium **metal** or alloy formed on an elec. conductive **substrate** by vacuum **film** forming, characterized in that a hydrophobic material layer is formed on the surface of a lithium **metal** or alloy, or an amorphous lithium **metal** or alloy formed on the **substrate**; and a method for manufg. the lithium secondary cell. The cell is free from the formation of dendrites and exhibits good cycle life.

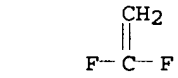
IT **24937-79-9**, PVDF
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**anode** plate for lithium secondary **battery**)

RN 24937-79-9 HCAPLUS

CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



IC ICM H01M004-02
ICS H01M004-04; H01M004-62

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **anode** plate lithium secondary **battery**

IT Secondary **batteries**
(**anode** plate for lithium secondary **battery**)

IT Carbon black, uses
Fluoropolymers, uses
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**anode** plate for lithium secondary **battery**)

IT 7439-93-2, Lithium, uses **24937-79-9**, PVDF 39457-42-6, Lithium manganese oxide
RL: DEV (Device component use); EPR (Engineering process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(**anode** plate for lithium secondary **battery**)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR

THIS RECORD. ALL CITATIONS AVAILABLE IN
THE RE FORMAT

L85 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:10860 HCAPLUS
DOCUMENT NUMBER: 136:72296
TITLE: Production of cathodes and **anodes** for **batteries** and fuel cells, metalized material for the electrodes, and production of the metalized material
INVENTOR(S): Kollmann, Wolfgang; Kollmann, Helga
PATENT ASSIGNEE(S): Austria
SOURCE: PCT Int. Appl., 44 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002001656	A2	20020103	WO 2001-EP7467	200106 29
			<--	
WO 2002001656	A3	20020808		
WO 2002001656	C2	20030515		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
EP 1299916	A2	20030409	EP 2001-949450	200106 29
			<--	
EP 1299916	B1	20040707		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
AT 270791	E	20040715	AT 2001-949450	200106 29
			<--	
ES 2225574	T3	20050316	ES 2001-1949450	200106 29
			<--	
US 2004013812	A1	20040122	US 2003-312618	200308 04
			<--	
PRIORITY APPLN. INFO.:			DE 2000-10031633 A	200006 29
			<--	

WO 2001-EP7467 W
200106
29
<--

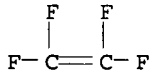
AB The invention relates to prodn. of composite cathodes and **anodes** for Li **batteries**, and the cathodes and **anodes** thereby produced. The active mass in the form of a thin **film** is incorporated into a material, or the active mass together with a matrix **metal** or a matrix alloy is deposited on a **substrate.** The invention also relates to a metalized, textile material made of insulating fibers which were made conductive and which were completely electroplated or electroless **coated.** The fibers lying on crossovers are not baked with other fibers, but can move freely. The surface of the material is thereby optimally used. Preferably, the material is used as an **anode** or a cathode for **batteries**, esp. a lithium **battery**, and fuel cells. During the electroplating or electroless **coating** stage in the prodn. of the material, the fibers in the material move relatively to each other to avoid baking. A device for the prodn. process comprises 1st rollers with an elliptical cross section and 2nd rollers with a diagonal circumferential profile, which extend or move the material passing over, and conveyed thereby, in the longitudinal and lateral direction.

IT **9002-84-0**, Polytetrafluoroethylene **24937-79-9**, Polyvinylidene fluoride
RL: TEM (Technical or engineered material use); USES (Uses)
(binder in prodn. of cathodes and **anodes** for **batteries** and fuel cells)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2

IC ICM H01M004-66
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 56, 72
ST cathode **battery** prodn; **anode battery**

prodn; electrode **battery** prodn
IT Polyamide fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(aramid; **substrate** in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(binder in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT Synthetic fibers
RL: TEM (Technical or engineered material use); USES (Uses)
(ceramic; **substrate** in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT **Coating** process
(electroless; in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT Synthetic polymeric fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fluoropolymers; **substrate** in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT Electrodeposition
(in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT **Battery anodes**
Battery cathodes
Battery electrodes
Fuel cell electrodes
(prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT Glass fibers, uses
Mineral fibers
Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Synthetic polymeric fibers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate** in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT **9002-84-0**, Polytetrafluoroethylene **24937-79-9**, Polyvinylidene fluoride
RL: TEM (Technical or engineered material use); USES (Uses)
(binder in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT 7429-90-5, Aluminum, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-32-6, Titanium, uses 7440-44-0, Carbon, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 11110-83-1 11149-64-7 12031-65-1, Lithium nickel oxide (LiNiO2) 12057-17-9, Lithium manganese oxide (LiMn2O4) 12190-79-3, Cobalt lithium oxide (LiCoO2) 12649-48-8 12683-37-3 12783-98-1 12797-00-1, Cobalt, nickel, phosphorus 39286-52-7 55326-82-4, Lithium titanium sulfide (LiTiS2) 55964-31-3, Lithium vanadium selenide (LiVSe2) 87398-22-9
RL: TEM (Technical or engineered material use); USES (Uses)
(in prodn. of cathodes and **anodes** for **batteries** and fuel cells)
IT 9002-88-4, Polyethylene 9002-98-6 9003-07-0, Polypropylene
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate** in prodn. of cathodes and **anodes** for **batteries** and fuel cells)

L85 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:828943 HCAPLUS
DOCUMENT NUMBER: 135:360217
TITLE: Fabrication of **battery** electrode containing a polymeric binder material
INVENTOR(S): Delnick, Frank M.; Iwamoto, Alan; Hu, Zhendong; Wang, Liya
PATENT ASSIGNEE(S): Imra America, Inc., USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6316142	B1	20011113	US 1999-281922	19990331

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PRIORITY APPLN. INFO.: US 1999-281922 19990331

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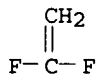
AB Provided are methods of forming an electrode suitable for use in an electrochem. cell, and novel electrodes which can be formed therefrom. The methods involve the steps of: (a) forming an electrode slurry from components comprising a solvent, a polymeric binder material and a solid electrode material, wherein the polymeric binder material is formed by modifying a polyolefin with at least one unsatd. polycarboxylic acid or an anhydride of the acid, chlorinating the modified polyolefin and partially crosslinking carboxyl groups or acid anhydride groups on the chlorinated, modified polyolefin with an epoxy group of a compd. which has at least two epoxy groups per mol.; (b) **coating** the electrode slurry on a **substrate**; and (c) evapg. the solvent. Also provided are electrochem. cells which include the inventive electrodes. The invention has particular applicability to the manuf. of nonaq. electrochem. power supplies.

IT **24937-79-9**, Pvdf
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



IC ICM H01M004-62
INCL 429217000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy

Technology)
Section cross-reference(s): 38
ST **battery** electrode polymeric binder material
IT Coke
RL: MOA (Modifier or additive use); USES (Uses)
(calcined; fabrication of **battery** electrode contg. polymeric binder material)
IT Hydrocarbons, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(chloro; fabrication of **battery** electrode contg. polymeric binder material)
IT **Coating** process
(dip; fabrication of **battery** electrode contg. polymeric binder material)
IT **Battery anodes**
Battery cathodes
Binders
Crosslinking
Electrodeposits
Screen printing
Secondary **batteries**
(fabrication of **battery** electrode contg. polymeric binder material)
IT Transition **metal** oxides
Transition **metal** sulfides
RL: DEV (Device component use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT Carbon black, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT EPDM rubber
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT **Coating** process
(gravure; fabrication of **battery** electrode contg. polymeric binder material)
IT Intermetallic compounds
RL: DEV (Device component use); USES (Uses)
(lithium; fabrication of **battery** electrode contg. polymeric binder material)
IT Polyolefins
RL: TEM (Technical or engineered material use); USES (Uses)
(modified; fabrication of **battery** electrode contg. polymeric binder material)
IT Epoxy resins, uses
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(reaction product with Superchlon 822S; fabrication of **battery** electrode contg. polymeric binder material)
IT **Coating** process
(roller; fabrication of **battery** electrode contg. polymeric binder material)
IT **Coating** process
(spray; fabrication of **battery** electrode contg. polymeric binder material)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(aerogel; fabrication of **battery** electrode contg. polymeric binder material)
IT 121-44-8, Triethylamine, uses
RL: CAT (Catalyst use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT 96-49-1, Ethylene carbonate 616-38-6, Dimethyl carbonate 1313-13-9, Manganese dioxide, uses 3889-75-6, Carbon monofluoride 7429-90-5, Aluminum, uses 7440-50-8, Copper, uses 7791-03-9, Lithium perchlorate 11126-12-8, Iron sulfide 11126-15-1, Lithium vanadium oxide 12057-17-9, Lithium manganese oxide LiMn2O4 12612-50-9, Molybdenum sulfide 12653-56-4, Cobalt sulfide 12673-92-6, Titanium sulfide 39300-70-4, Lithium nickel oxide 39457-42-6, Lithium manganese oxide 52627-24-4, Cobalt lithium oxide
RL: DEV (Device component use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT 78-93-3, Ethyl methyl ketone, uses 119-64-2, 1,2,3,4-Tetrahydronaphthalene 123-86-4, Butyl acetate 141-78-6, Ethyl acetate, uses 7440-44-0, Carbon, uses
RL: MOA (Modifier or additive use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT 25068-38-6DP, Bisphenol A-epichlorohydrin copolymer, reaction product with Superchlon 822S 174515-06-1DP, Superchlon 822S, reaction product with epoxy resin
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
IT 71-55-6, 1,1,1-Trichloroethane 108-10-1, Methyl isobutyl ketone 108-87-2, Methyl cyclohexane 108-88-3, Toluene, uses 110-82-7, Cyclohexane, uses 872-50-4, n-Methyl pyrrolidone, uses 1330-20-7, Xylene, uses 1678-91-7, Ethyl cyclohexane **24937-79-9**, Pvdf 372192-35-3, Superchlon 803MWS 372192-40-0, Superchlon 814HE
RL: TEM (Technical or engineered material use); USES (Uses)
(fabrication of **battery** electrode contg. polymeric binder material)
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L85 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:421891 HCAPLUS
DOCUMENT NUMBER: 131:47147
TITLE: **Metal**-hydride hydrogen storage rechargeable **batteries**
INVENTOR(S): Wang, Jin San; Dou, Shi Xie; Wang, Yu Jie; Li, Wen Liang; Sun, Lain Zhi; Wang, Shou Jun; Wang, Wei Jie; Li, Chang Suo; Xia, Xi; Zhong, Shi; Liu, Hua Kun
PATENT ASSIGNEE(S): Peop. Rep. China
SOURCE: PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9933126	A1	19990701	WO 1998-AU1057	199812 21
			<--	
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CN 1220498	A	19990623	CN 1997-122056	199712 19
			<--	
CN 1085896	B	20020529		
AU 9916521	A1	19990712	AU 1999-16521	199812 21
			<--	
PRIORITY APPLN. INFO.:			CN 1997-122056 A	199712 19
			<--	
			WO 1998-AU1057 W	199812 21
			<--	

AB The present invention relates to a method of fabrication of electrodes for **batteries**, in particular **metal** -hydride hydrogen storage rechargeable **batteries.** In conventional methods, a **battery substrate** (usually a nickel based **substrate**), is **coated** with an active electrode material (such as Ni(OH)2), to form an electrode for the **battery.** The **coating** is usually done by a wet-paste process. A problem with this process is that some oxidn. of the active electrode material occurs and it is not possible to **coat** the **substrate** uniformly. The present invention discloses a dry powder process, in which a **substrate** is **coated** with a dry powder and subsequently dipped in PTFE soln. The dry powder process reduces oxidn. and the dipping in PTFE maintains the integrity of the active electrodes material on the **substrate**, as well as further reducing oxidn. Another aspect of the invention is that the **substrate** used is copper or a copper alloy, which has better cond. and less cost than the nickel **substrate.**

IT **9002-84-0**
RL: TEM (Technical or engineered material use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)

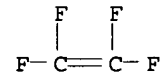
RN 9002-84-0 HCAPLUS

CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3

CMF C2 F4



IC ICM H01M004-26
ICS H01M004-32; H01M004-44; H01M004-52; H01M004-62; H01M004-74
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56
ST hydrogen storage **anode** rechargeable **battery**
IT **Battery anodes**
Battery cathodes
Secondary **batteries**
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT Copper alloy, base
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT 7429-90-5, Aluminum, uses 7440-22-4, Silver, uses 7440-31-5, Tin, uses 7440-36-0, Antimony, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(Cu alloy contg.; **metal**-hydride hydrogen storage rechargeable **batteries**)
IT 12054-48-7, Nickel hydroxide
RL: DEV (Device component use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses 12196-72-4 37232-42-1 227468-16-8 227468-17-9 227468-18-0
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT 1307-96-6, Cobalt oxide coo, uses
RL: MOA (Modifier or additive use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
IT **9002-84-0**
RL: TEM (Technical or engineered material use); USES (Uses)
(**metal**-hydride hydrogen storage rechargeable **batteries**)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L85 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:163730 HCAPLUS
DOCUMENT NUMBER: 128:222863
TITLE: Process for preparing porous electrolytic **metal** foil
INVENTOR(S): Kato, Hitoshi; Ashizawa, Koichi; Akutsu, Tsukasa

PATENT ASSIGNEE(S): Circuit Foil Japan Co., Ltd., Japan
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9809003	A1	19980305	WO 1996-JP2460	199608 30
			<--	
W: US				
RW: DE, FR, GB, LU				
EP 860518	A1	19980826	EP 1996-928719	199608 30
			<--	
EP 860518	B1	20030813		
R: DE, FR, GB, LU				
US 6153077	A	20001128	US 1998-65092	199804 24
			<--	
PRIORITY APPLN. INFO.:			WO 1996-JP2460 W	199608 30
			<--	

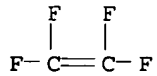
AB A process for prepg. a porous electrolytic **metal** foil by electrodepositing a **metal** on a drum cathode by using a drum cathode and an **anode** to form a **metal** foil layer and sepg. the formed layer from the drum cathode, wherein a **coating** of an elec. insulating material is formed on the cathode surface exposed after the foil sepn. by subjecting the exposed surface to electrolytic oxidn., by spraying the exposed surface with a resin liq., or by suspending a machine oil or the like in an electrolyte to deposit the machine oil onto the exposed surface. The **metal** foil thus obtained has a large no. of interconnecting pores in the direction of thickness and, when used as a collector **substrate** of an electrode for a **battery**, can prevent the sepn. of a composite for a **battery**, thus contributing to an improvement in the cycle time of a **battery.**

IT **9002-84-0**, Polytetrafluoroethylene **24937-79-9**, Poly(fluorovinylidene)
RL: TEM (Technical or engineered material use); USES (Uses)
(for prepg. secondary **battery** electrode)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2

IC ICM C25D001-04
ICS C25D001-08; C25C005-02
CC 72-8 (**Electrochemistry**)
Section cross-reference(s): 52, 55, 56
ST porous electrolytic **metal** foil electrodeposition; secondary **battery** electrode collector **substrate**
IT Oxidation, electrochemical
(electrochem. oxidn. of **metal** foil-peeled Ti cathode surface)
IT Carbon black, uses
Fluoropolymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(for prepg. secondary **battery** electrode)
IT Electrodeposition
(prepg. porous electrolytic copper **metal** foil on Ti cathode by electrodeposition)
IT **Battery** electrodes
(process for prepg.)
IT 872-50-4, N-Methylpyrrolidone, uses 7782-42-5, Graphite, uses **9002-84-0**, Polytetrafluoroethylene 12190-79-3, Lithium cobalt oxide (LiCoO2) **24937-79-9**, Poly(fluorovinylidene)
RL: TEM (Technical or engineered material use); USES (Uses)
(for prepg. secondary **battery** electrode)
IT 13463-67-7, Titanium oxide, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(formation in electrochem. oxidn. of **metal** foil-peeled Ti cathode surface)
IT 1333-74-0, Hydrogen, uses
RL: DEV (Device component use); USES (Uses)
(**neg. electrode** for nickel-hydrogen secondary **battery**)
IT 7440-50-8P, Copper, processes
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(prepg. porous electrolytic copper **metal** foil by electrodeposition)
IT 7440-32-6, Titanium, uses
RL: DEV (Device component use); USES (Uses)
(prepg. porous electrolytic copper **metal** foil on Ti cathode by electrodeposition)
IT 7440-02-0, Nickel, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)

(prepg. porous electrolytic nickel **metal** foil by electrodeposition)
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

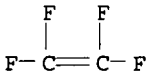
L85 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:719318 HCAPLUS
DOCUMENT NUMBER: 123:88429
TITLE: Manufacture of paste-type nickel electrodes for **batteries**
INVENTOR(S): Mizuno, Takashi
PATENT ASSIGNEE(S): Furukawa Battery Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07122272	A2	19950512	JP 1993-285597	199310 21
			<--	
PRIORITY APPLN. INFO.:			JP 1993-285597	199310 21
			<--	

AB A 3-dimensional porous **metal substrate** is **coated** on 1 side with an aq. dispersion of liq. synthetic resin, then the remaining pores are filled with a pos. electrode active mass paste, and the pos. electrode is dried and rolled. The pos. electrode is laminated with a **neg. electrode** and separator in such a manner that the resin-filled surface layer faces outward and the laminate is coiled. Cracking of the pos. electrode in coiling is prevented.
IT **9002-84-0**, PTFE
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(filling pores with; manuf. of paste-type nickel electrodes for **batteries**)
RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-32
ICS H01M010-28
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery** paste nickel electrode; polymer filling pore electrode **battery**

IT Electrodes
(**battery**, manuf. of paste-type nickel electrodes for **batteries**)

IT **9002-84-0**, PTFE
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(filling pores with; manuf. of paste-type nickel electrodes for **batteries**)

IT 7440-02-0, Nickel, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(manuf. of paste-type nickel electrodes for **batteries**)

L85 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:609246 HCAPLUS
DOCUMENT NUMBER: 121:209246
TITLE: **Anode** for nickel/hydrogen **battery**, its preparation, and the **battery**
INVENTOR(S): Mizuno, Takashi
PATENT ASSIGNEE(S): Furukawa Battery Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06168719	A2	19940614	JP 1992-339626	19921126

<--

PRIORITY APPLN. INFO.: JP 1992-339626 19921126

<--

AB The **anode** comprises a pierced porous **metal substrate** successively **coated** with a layer contg. mixts. of PTFE fibers and elec. conductive powders; and a layer of H-absorbing alloy powders. Prepn. of the **anode** involves the following steps; (1) applying a **coating** soln. prepd. by mixing of PTFE dispersion and elec. conductive powders on the **metal substrate**, (2) applying H-absorbing alloy powders-mainly contg. paste, (3) drying, and (4) rolling. The **battery** using the **anode** is also claimed. The **anode** plate inhibits peeling of the H-absorbing alloy powder **coating**.

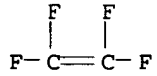
IT **9002-84-0**, PTFE
RL: USES (Uses)
(fibers, **anodes** contg., hydrogen-absorbing alloy, for secondary **batteries**)

RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3

CMF C2 F4



IC ICM H01M004-24
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST hydrogen absorbing alloy **anode battery**; nickel hydrogen **battery anode**
IT **Anodes**
(**battery**, hydrogen-absorbing alloy, contg. PTFE fibers)
IT Synthetic fibers, polymeric
RL: USES (Uses)
(tetrafluoroethylene, **anodes** contg., hydrogen-absorbing alloy, for secondary **batteries**)
IT 1333-74-0, Hydrogen, miscellaneous
RL: MSC (Miscellaneous)
(alloys contg. absorbed, **anodes** contg., for secondary **batteries**)
IT 139658-93-8
RL: USES (Uses)
(**anodes** contg., hydrogen-absorbing alloy, for secondary **batteries**)
IT **9002-84-0**, PTFE
RL: USES (Uses)
(fibers, **anodes** contg., hydrogen-absorbing alloy, for secondary **batteries**)
IT 157875-75-7
RL: USES (Uses)
(hydrogen-absorbing, **anodes** contg., for secondary **batteries**)

L85 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:238867 HCAPLUS
DOCUMENT NUMBER: 116:238867
TITLE: **Anodes** for cylindrical secondary alkali **metal batteries**
INVENTOR(S): Miyabayashi, Mitsutaka; Hayashi, Manabu
PATENT ASSIGNEE(S): Mitsubishi Petrochemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04039857	A2	19920210	JP 1990-144548	19900604 <--
JP 3153223	B2	20010403		

PRIORITY APPLN. INFO.: JP 1990-144548 19900604 <--

AB The **anodes** have an **anode**-active alkali **metal** (Li) loaded on a **substrate** of synthetic rubber (SBR)-**coated** powd. carbonaceous material, which has a H/C at. ratio <0.15, an interplanar spacing d002 >3.37 Å, and a unit-cell length Lc <180 Å. **Batteries** using these **anodes** have high coulombic efficiency after repeated charge-discharge cycles.

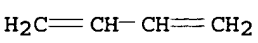
IT **9003-55-8**
RL: USES (Uses)
(rubber, **anodes** with **substrates** of carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)

RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

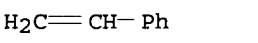
CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8



IC ICM H01M004-02
ICS H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery** lithium carbon **anode**; SBR **coating** carbon lithium **anode**

IT Carbonaceous materials
RL: USES (Uses)
(**anodes** with **substrates** of SBR-**coated**, lithium, for cylindrical secondary **batteries**)

IT Rubber, butadiene-styrene, uses
RL: USES (Uses)
(**anodes** with **substrates** of carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)

IT **Anodes**
(**battery**, lithium, **substrates** of SBR-**coated** carbonaceous materials for)

IT 9004-34-6D, Cellulose, pyrolyzed
RL: USES (Uses)
(**anodes** with **substrates** of SBR-**coated**, lithium, for cylindrical secondary **batteries**)

IT 7439-93-2, Lithium, uses
RL: USES (Uses)
(**anodes**, **substrates** from SBR-**coated** carbonaceous materials for, in cylindrical secondary **batteries**)

IT **9003-55-8**

RL: USES (Uses)
(rubber, **anodes** with **substrates** of carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)

L85 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:238866 HCAPLUS
DOCUMENT NUMBER: 116:238866
TITLE: **Anodes** for cylindrical secondary alkali **metal batteries**
INVENTOR(S): Miyabayashi, Mitsutaka; Hayashi, Manabu
PATENT ASSIGNEE(S): Mitsubishi Petrochemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04039862	A2	19920210	JP 1990-144549	19900604
			<--	
JP 3153224	B2	20010403		

PRIORITY APPLN. INFO.: JP 1990-144549 19900604
<--

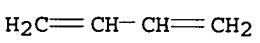
AB The **anodes** have an **anode**-active alkali **metal** (Li) loaded on a **substrate** comprising a powd. **metal** (Al) alloyable with the alkali **metal** or a powd. alloy contg. the alkali **metal** and a elastomer (SBR)-**coated** powd. carbonaceous material (cellulose) which has a H/C at. ratio <0.15, an interplanar spacing d002 >3.37 Å, and a unit-cell length Lc <180 Å. **Batteries** using these **anodes** have high coulombic efficiency after repeated charge-discharge cycles.

IT **9003-55-8**
RL: USES (Uses)
(rubber, **anodes** with **substrates** contg. aluminum and carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)

RN 9003-55-8 HCAPLUS
CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6



CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM H01M004-62
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** lithium aluminum carbon **anode**; SBR **coating** carbon lithium **anode**
IT Carbonaceous materials
RL: USES (Uses)
(**anodes** with **substrates** contg. aluminum and SBR-**coated**, lithium, for cylindrical secondary **batteries**)
IT Rubber, butadiene-styrene, uses
RL: USES (Uses)
(**anodes** with **substrates** contg. aluminum and carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)
IT **Anodes**
(**battery**, lithium, **substrates** contg. aluminum and SBR-**coated** carbonaceous materials for)
IT 7429-90-5, Aluminum, uses
RL: USES (Uses)
(**anodes** with **substrates** contg. SBR-**coated** carbonaceous materials and, lithium, for cylindrical secondary **batteries**)
IT 9004-34-6D, Cellulose, pyrolyzed
RL: USES (Uses)
(**anodes** with **substrates** contg. aluminum and SBR-**coated**, lithium, for cylindrical secondary **batteries**)
IT 7439-93-2, Lithium, uses
RL: USES (Uses)
(**anodes**, with **substrates** contg. aluminum and SBR-**coated** carbonaceous materials, for cylindrical secondary **batteries**)
IT **9003-55-8**
RL: USES (Uses)
(rubber, **anodes** with **substrates** contg. aluminum and carbonaceous materials **coated** with, lithium, for cylindrical secondary **batteries**)

L85 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:250702 HCAPLUS
DOCUMENT NUMBER: 114:250702
TITLE: Manufacture of hydrogen-absorbing **anodes**
INVENTOR(S): Mizuno, Takashi
PATENT ASSIGNEE(S): Furukawa Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02253557	A2	19901012	JP 1989-73445	198903

24
<--
PRIORITY APPLN. INFO.: JP 1989-73445
198903
24
<--

AB A H-absorbing alloy powder and a binder powder are mixed, optionally ground, electroless **coated**, mixed and kneaded with a viscous liq., and packed in porous **metal substrates** to obtain H-absorbing **anodes.** The binder can preferably be fibrillated. **Anodes** prepd. from LaNi4.7Al0.3-PTFE mixts. **coated** with Cu had high capacity and good discharge performance.

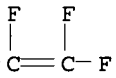
IT **9002-84-0**, PTFE
RL: USES (Uses)
(**anodes** from copper-**coated** mixts. of hydrogen-absorbing alloy and, for **batteries**)

RN 9002-84-0 HCAPLUS

CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-26
ICS H01M004-28

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST **battery anode** hydrogen absorbing alloy; **anode** hydrogen absorbing alloy **coating**; copper **coating** hydrogen absorbing **anode**; aluminum lanthanum nickel alloy **coating**; PTFE hydrogen absorbing alloy **anode**

IT **Anodes**
(**battery**, hydrogen, **coated** alloy-binder mixts. for)

IT **9002-84-0**, PTFE
RL: USES (Uses)
(**anodes** from copper-**coated** mixts. of hydrogen-absorbing alloy and, for **batteries**)

IT 7440-50-8, Copper, uses and miscellaneous
RL: USES (Uses)
(**anodes** from mixt. of hydrogen-absorbing alloy and PTFE **coated** with, for **batteries**)

IT 1333-74-0, Hydrogen, uses and miscellaneous
RL: USES (Uses)
(**anodes**, **coated** hydrogen-absorbing alloy-binder mixts. for, in **batteries**)

IT 82089-05-2, Aluminum 5, lanthanum 16.66, nickel 78.33 (at.)
RL: USES (Uses)
(hydrogen-absorbing, **anodes** from copper-**coated** mixts. of PTFE and, for **batteries**)

L85 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:189111 HCAPLUS

DOCUMENT NUMBER: 114:189111
TITLE: Manufacture of hydrogen-absorbing **anodes**
INVENTOR(S): Furukawa, Atsushi
PATENT ASSIGNEE(S): Furukawa Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 02236957	A2	19900919	JP 1989-57358	19890309
			<--	
JP 2918560	B2	19990712		

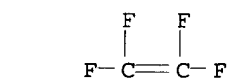
PRIORITY APPLN. INFO.: JP 1989-57358 19890309
<--

AB A H-absorbing powder-based paste contg. no fibrous binders is filled in porous **metal substrates**, dried, the **substrates** are **coated** with a suspension of a fibrous binder, dried, and rolled to obtain H-absorbing **anodes**. **Anodes** using PTFE binder prepd. by this method had a network of PTFE fibers on their surface and long cycle life.

IT **9002-84-0**, PTFE
RL: USES (Uses)
(binder, **anodes** covered with fibrous, hydrogen-absorbing, for **batteries**)
RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-38
ICS C25B011-04; H01M004-26
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** hydrogen absorbing **anode**; hydrogen absorbing **anode** binder fiber; PTFE fiber hydrogen absorbing **anode**
IT **Anodes**
(**battery**, hydrogen-absorbing, fibrous PTFE binder-covered, manuf. of)
IT 1333-74-0, Hydrogen, uses and miscellaneous
RL: USES (Uses)
(alloys contg. absorbed, **anodes** from fibrous PTFE binder-covered, for **batteries**)

IT **9002-84-0**, PTFE
RL: USES (Uses)
(binder, **anodes** covered with fibrous, hydrogen-absorbing, for **batteries**)

L85 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1990:443849 HCAPLUS
DOCUMENT NUMBER: 113:43849
TITLE: Manufacture of zinc **anodes** for secondary alkaline **batteries**
INVENTOR(S): Ishikura, Yoshikazu
PATENT ASSIGNEE(S): Sanyo Electric Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 01264170	A2	19891020	JP 1988-91971	198804 14

<--

PRIORITY APPLN. INFO.: JP 1988-91971 198804 14

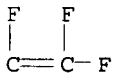
<--

AB A porous **metal substrate** having a 3-dimensional continuous pore structure is filled with Zn and **coated** with a mixt. of a fluoropolymer dispersion and an adhesive paste to obtain the title **anodes.** The **coating** prevents loss of active mass and deformation of the **anode.**

IT **9002-84-0**, Polyflon D1
RL: USES (Uses)
(**anodes coated** with adhesives and, zinc, for secondary alk. **batteries**)
RN 9002-84-0 HCAPLUS
CN Ethene, tetrafluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 116-14-3
CMF C2 F4



IC ICM H01M004-26
ICS H01M004-62
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** zinc **anode** fluoropolymer **coating** ; adhesive **coating** zinc **battery anode**
IT Adhesives
(**anodes coated** with fluoropolymer and, zinc, for secondary alk. **batteries**)

IT **Anodes**
(**battery**, zinc, with fluoropolymer-adhesive **coatings**, for preventing active mass loss and deformation)
IT **9002-84-0**, Polyflon D1
RL: USES (Uses)
(**anodes coated** with adhesives and, zinc, for secondary alk. **batteries**)
IT 9004-64-2, Hydroxypropylcellulose
RL: USES (Uses)
(**anodes coated** with fluoropolymer and, zinc, for secondary alk. **batteries**)
IT 7440-66-6, Zinc, uses and miscellaneous
RL: USES (Uses)
(**anodes**, with fluoropolymer-adhesive **coatings**, for secondary alk. **batteries**)

L85 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:158615 HCAPLUS
DOCUMENT NUMBER: 82:158615
TITLE: Organic-electrolyte **batteries** with a light **metal anode** and fluorinated-carbon cathode
INVENTOR(S): Kondo, Shigeo; Iijima, Takashi; Fukuda, Masataro
PATENT ASSIGNEE(S): Matsushita Electric Ind. Co., Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 49105929	A2	19741007	JP 1973-18919	197302 15
			<--	
JP 52016204	B4	19770507		

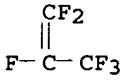
PRIORITY APPLN. INFO.: JP 1973-18919 A 197302 15
<--

AB **Batteries** of improved shelf life contain electrolytes dissolved in Lewis base-type org. solvents, and an Al [7429-90-5] **substrate** for the cathodes. The fluorinated graphite [11113-63-6] reacts with the Al **substrate** to form Al fluoride in the boundary region which prevents the soln. of Al, and the C produced by the reaction maintains the elec. cond. of the electrode. Thus, a **battery** was made by using a Li [7439-93-2] **anode** supported on a Ni net, a LiBF4 electrolyte in γ-butyrolactone (1 mole/l.), and a cathode prepd. by **coating** a corrugated Al sheet with a mixt. contg. fluorinated C 10, acetylene black 0.5, and tetrafluoroethylene-hexafluoropropylene polymer [**25067-11-2**] 1.5 parts. The discharge characteristics of the **battery** after 6 months storage at 45° were comparable to those of a freshly prepd. **battery.**
IT **25067-11-2**
RL: USES (Uses)
(cathodes contg., nonaq. **battery**)

RN 25067-11-2 HCAPLUS
CN 1-Propene, 1,1,2,3,3,3-hexafluoro-, polymer with tetrafluoroethene (9CI) (CA INDEX NAME)

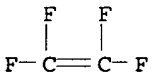
CM 1

CRN 116-15-4
CMF C3 F6



CM 2

CRN 116-14-3
CMF C2 F4



INCL 57A0; 57B0
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST fluorinated carbon lithium **battery**; org electrolyte **battery**
IT Cathodes
(**battery**, fluorinated carbon)
IT **Anodes**
(**battery**, lithium, with fluorinated-carbon cathode)
IT Carbon black, uses and miscellaneous
RL: USES (Uses)
(cathodes contg., nonaq. **battery**)
IT **Batteries**, secondary
(lithium-fluorinated carbon, with nonaq. electrolyte)
IT 7439-93-2, uses and miscellaneous
RL: USES (Uses)
(**anodes**, in nonaq. **battery** with fluorinated carbon-contg. cathode)
IT **25067-11-2**
RL: USES (Uses)
(cathodes contg., nonaq. **battery**)
IT 11113-63-6
RL: USES (Uses)
(cathodes, contg., nonaq. **battery**)
IT 7429-90-5, uses and miscellaneous
RL: USES (Uses)
(cathodes, fluorinated carbon-**coated**, nonaq. **battery**)

=> file reg
FILE 'REGISTRY' ENTERED AT 17:41:38 ON 31 JAN 2006

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L8            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  24937-79-9/RN
L9            1 SEA FILE=REGISTRY ABB=ON  PLU=ON  9002-84-0/RN
L10      118223 SEA FILE=REGISTRY ABB=ON  PLU=ON  PSTY/PCT
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L25           1 SEA FILE=REGISTRY ABB=ON  PLU=ON  82451-56-7/RN
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                 OR L5
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              L57 OR L58 OR L59
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              ELECTRODE#
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L63      1994611 SEA FILE=HCAPLUS ABB=ON  PLU=ON  FILM# OR COAT?
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              L63 AND L64 AND ROUGH?
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              L63 AND L64 AND METAL# AND ELECTROCHEM?/SC
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              L63 AND L64 AND ROUGH?
L76           36 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L45 AND L61 AND L62 AND
              L63 AND L64 AND METAL# AND ELECTROCHEM?/SC
L77           32 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L76 AND (1840-2002)/PRY,
              PY
L78           33 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L74 OR L77
L83           46 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L60 AND L61 AND L62 AND
              L63 AND L64 AND METAL# AND ELECTRO?/SC AND SECONDARY
L85           23 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 NOT L72
L86           10 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L78 NOT L85
L87           17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L72 OR L86
L88           17 SEA FILE=HCAPLUS ABB=ON  PLU=ON  L83 NOT (L87 OR L85)


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FILE 'HCAPLUS' ENTERED AT 17:41:50 ON 31 JAN 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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=> d l88 1-17 ibib abs hitstr hitind

L88  ANSWER 1 OF 17  HCAPLUS  COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER:         2005:963200  HCAPLUS
DOCUMENT NUMBER:          143:269606
TITLE:                    Hydrogen-absorbing alloy anode and its
                          manufacture for nickel-hydrogen battery
INVENTOR(S):              Mori, Hiroaki; Ichikawa, Manabu; Furukawa,
                          Kengo; Okabe, Kazuya; Nukuta, Toshiyuki
PATENT ASSIGNEE(S):       Yuasa Corporation, Japan
SOURCE:                   Jpn. Kokai Tokkyo Koho, 17 pp.
                          CODEN: JKXXAF
DOCUMENT TYPE:            Patent
LANGUAGE:                 Japanese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.           KIND   DATE        APPLICATION NO.        DATE
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     JP 2005235436         A2    20050902    JP 2004-40086
                                                                   200402
                                                                   17
PRIORITY APPLN. INFO.:                       JP 2004-40086
                                                                   200402
                                                                   17
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AB The claimed **anode**, equipped with active mass contg. a H-absorbing alloy and a binder contg. styrene-butadiene rubber or its deriv. and a plated punched **metal substrate**, is characterized by (1) the **substrate** having sheet thickness without plating 30-45 μm, opening diam. 0.8-1.2 mm, and opening area ratio 35-55%, (2) the binder contg. solid component ratio to the alloy 0.5-0.9 wt.%, and (3) H-absorbing alloy d. 5.5-6.5 g/cc. Alternatively, the **anode** is characterized by remaining space 6.6-21 vol.%. The **anode** is manufd. by press rolling by 1 time under line pressure 5-15 ton/cm. The resulting Ni-H **battery** provides high energy d. and productivity.

IT **9003-55-8**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber, binders; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

RN 9003-55-8 HCAPLUS

CN Benzene, ethenyl-, polymer with 1,3-butadiene (9CI) (CA INDEX NAME)

CM 1

CRN 106-99-0
CMF C4 H6

$H_2C{=}CH{-}CH{=}CH_2$

CM 2

CRN 100-42-5
CMF C8 H8

$H_2C{=}CH{-}Ph$

IC ICM H01M004-24
ICS H01M004-26; H01M010-30

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST hydrogen absorbing alloy **anode** punched **metal substrate**; nickel hydrogen **battery anode** binder styrene butadiene rubber

IT Styrene-butadiene rubber, uses
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(binders; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT **Battery anodes**
Secondary batteries
(manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT Molding
(press; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT 1333-74-0, Hydrogen, uses
RL: DEV (Device component use); USES (Uses)

(alloys contg. absorbed, **anodes**; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT 37353-59-6, Hydroxymethylcellulose
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(binders; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT 7440-02-0, Nickel, uses
RL: DEV (Device component use); USES (Uses)
(**coating**, on punched steel **substrates**; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT 863645-26-5
RL: DEV (Device component use); USES (Uses)
(hydrogen-absorbing, **anodes**; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT 12597-69-2, Steel, uses
RL: DEV (Device component use); USES (Uses)
(punched **substrates**; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

IT **9003-55-8**
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(styrene-butadiene rubber, binders; manuf. of hydrogen-absorbing alloy **anode** by rolling for nickel-hydrogen **battery**)

L88 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:450692 HCAPLUS
DOCUMENT NUMBER: 142:449436
TITLE: Solid state synthesis of lithium ion **battery** cathode material
INVENTOR(S): Eberman, Kevin W.; Scanlan, Jerome E.; Goodbrake, Chris J.
PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA
SOURCE: U.S. Pat. Appl. Publ., 8 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005112054	A1	20050526	US 2003-723511	200311 26
WO 2005056480	A1	20050623	WO 2004-US34750	200410 20

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,

DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRIORITY APPLN. INFO.: US 2003-723511 A 200311 26

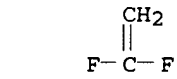
AB Single-phase lithium-transition **metal** oxide compds. contg. cobalt, manganese and nickel can be prepd. by wet milling cobalt-, manganese-, nickel- and lithium-contg. oxides or oxide precursors to form a finely-divided slurry to form a lithium-transition **metal** oxide compd. contg. cobalt, manganese and nickel and having a substantially single-phase O3 crystal structure. Water is used for wet milling. Manganese and nickel carbonates are used as precursors. The produced oxide can have the following general formula: Lia[Cox(Ni1/2Mn1/2)1-x]O2 where 0≤a≤1.2 and 0.1≤x≤0.98. The lithium-transition **metal** oxide is mixed with conductive carbon and a binder, and **coating** the mixt. onto a supporting **substrate** to form a lithium **battery** cathode. The **battery** capacity does not substantially decrease after the **battery** is charged and discharged between 4.4 and 2.5 V for at least 100 cycles at a 75 mA/g discharge rate.

IT **24937-79-9**, Kynar 461
RL: DEV (Device component use); USES (Uses)
(solid state synthesis of lithium ion **battery** cathode material)

RN 24937-79-9 HCAPLUS
CN Ethene, 1,1-difluoro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 75-38-7
CMF C2 H2 F2



IC ICM C01D001-02
ICS H01M004-52; H01M004-50
INCL 423594400; 429231300; 429224000; 429223000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 49
ST solid state synthesis lithium transition **metal** oxide **battery** cathode
IT **Secondary batteries**
(lithium; solid state synthesis of lithium ion **battery** cathode material)
IT **Battery** cathodes
Solid state reaction
(solid state synthesis of lithium ion **battery** cathode material)
IT Fluoropolymers, uses
RL: DEV (Device component use); USES (Uses)
(solid state synthesis of lithium ion **battery** cathode material)
IT Milling (size reduction)
(wet; solid state synthesis of lithium ion **battery**

cathode material)
IT 7439-93-2, Lithium, uses
RL: DEV (Device component use); USES (Uses)
(**anode**; solid state synthesis of lithium ion **battery** cathode material)
IT 7440-44-0, Carbon, uses
RL: DEV (Device component use); USES (Uses)
(conductive; solid state synthesis of lithium ion **battery** cathode material)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(electrolyte; solid state synthesis of lithium ion **battery** cathode material)
IT 182442-95-1P, Cobalt lithium manganese nickel oxide 227623-80-5P, Cobalt lithium manganese nickel oxide (Co0.8LiMn0.1Ni0.1O2)
RL: CPS (Chemical process); DEV (Device component use); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process); USES (Uses)
(solid state synthesis of lithium ion **battery** cathode material)
IT 554-13-2, Lithium carbonate 598-62-9, Manganese II carbonate 3333-67-3, Nickel carbonate 21041-93-0, Cobalt II hydroxide
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(solid state synthesis of lithium ion **battery** cathode material)
IT **24937-79-9**, Kynar 461
RL: DEV (Device component use); USES (Uses)
(solid state synthesis of lithium ion **battery** cathode material)

L88 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:325569 HCAPLUS
DOCUMENT NUMBER: 142:376593
TITLE: In-line deposition processes for thin **film battery** fabrication
INVENTOR(S): Kelley, Tommie W.; Theiss, Steven D.; Muyres, Dawn V.; Baude, Paul F.; Haase, Michael A.
PATENT ASSIGNEE(S): 3M Innovative Properties Company, USA
SOURCE: U.S. Pat. Appl. Publ., 19 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005079418	A1	20050414	US 2003-685725	200310 14
WO 2005041324	A2	20050506	WO 2004-US27932	200408 27
WO 2005041324	A3	20050630		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,

SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: US 2003-685725 A 200310 14

AB In one embodiment, the invention is directed to aperture mask deposition techniques using aperture mask patterns formed in one or more elongated webs of flexible **film**. The techniques involve sequentially depositing material through mask patterns formed in the **film** to define layers, or portions of layers, of the thin **film battery**. A deposition **substrate** can also be formed from an elongated web, and the deposition **substrate** web can be fed through a series of deposition stations.

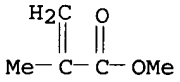
IT **9011-14-7**, Pmma
RL: DEV (Device component use); USES (Uses)
(aperture mask; in-line deposition processes for thin **film battery** fabrication)

RN 9011-14-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, methyl ester, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 80-62-6
CMF C5 H8 O2



IC ICM H01M006-00
ICS H01M004-58; B05D005-12; C23C016-26

INCL 429231950; 029623100; 427115000; 427282000; 427249100; 118504000

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 76

ST **battery** thin **film** fabrication in line deposition process

IT Combustion
(CVD; in-line deposition processes for thin **film battery** fabrication)

IT Polycarbonates, uses
Polyesters, uses
Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(aperture mask; in-line deposition processes for thin **film battery** fabrication)

IT Vapor deposition process
(chem.; in-line deposition processes for thin **film battery** fabrication)

IT **Battery anodes**
Battery cathodes
Electron beam evaporation

Glass **substrates**
Integrated circuits
Primary **batteries**
Shadow masks
Sputtering
Vapor deposition process
(in-line deposition processes for thin **film** **battery** fabrication)

IT Primary **batteries**
Secondary batteries
(lithium; in-line deposition processes for thin **film** **battery** fabrication)

IT Transition **metal** oxides
RL: DEV (Device component use); USES (Uses)
(lithium; in-line deposition processes for thin **film** **battery** fabrication)

IT Vapor deposition process
(plasma; in-line deposition processes for thin **film** **battery** fabrication)

IT Laser radiation
(pulsed, deposition; in-line deposition processes for thin **film battery** fabrication)

IT Paper
(**substrate**; in-line deposition processes for thin **film battery** fabrication)

IT Polymers, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; in-line deposition processes for thin **film battery** fabrication)

IT Evaporation
(thermal; in-line deposition processes for thin **film** **battery** fabrication)

IT 9003-53-6, Polystyrene **9011-14-7**, Pmma
RL: DEV (Device component use); USES (Uses)
(aperture mask; in-line deposition processes for thin **film battery** fabrication)

IT 1314-62-1, Vanadium oxide (V2O5), uses 7439-93-2, Lithium, uses 7439-93-2D, Lithium, intercalation compd. 7440-31-5, Tin, uses 7440-57-5, Gold, uses 11110-87-5 12039-13-3, Titanium sulfide (TiS2) 12162-79-7, Lithium manganese oxide limno2 12162-92-4, Lithium vanadium oxide (LiV2O5) 12190-79-3, Cobalt lithium oxide (CoLiO2) 12423-04-0, Lithium vanadium oxide (LiV3O8) 39457-42-6, Lithium manganese oxide 113066-89-0, Cobalt lithium nickel oxide (Co0.2LiNi0.8O2) 131500-40-8, Tin nitride oxide silicide 184905-46-2, Lithium nitrogen phosphorus oxide 210767-01-4, Lithium manganese oxide (LiMn2O2) 849641-88-9, Lithium vanadium oxide (LiV3O13) 849641-89-0, Lithium manganese oxide (LiMnO4)
RL: DEV (Device component use); USES (Uses)
(in-line deposition processes for thin **film** **battery** fabrication)

IT 7440-21-3, Silicon, uses 7631-86-9, Silica, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**substrate**; in-line deposition processes for thin **film battery** fabrication)

L88 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:632499 HCAPLUS
DOCUMENT NUMBER: 141:159875
TITLE: **Secondary** lithium **battery** **anode** component and the **battery**
INVENTOR(S): Ota, Yukihiro; Okuda, Nobuyuki; Ueki, Hiroyuki; Ihara, Hirohiko

PATENT ASSIGNEE(S): Sumitomo Electric Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004220894	A2	20040805	JP 2003-6113	20030114
JP 3680835	B2	20050810		
JP 2005011821	A2	20050113	JP 2004-258461	20040906

PRIORITY APPLN. INFO.: JP 2003-6113 A3 20030114

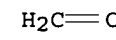
AB The component has a Li **film** formed on a **substrate** and an inorg. solid electrolyte membrane formed on the Li **film**; where the **substrate** is an elec. insulator. Another type of the component has the Li **film** formed on a **metal substrate** and an optional elec. insulator layer established at the interface between the **metal substrate** and the Li **film.** The **battery** uses the above **anode** component.

IT **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene
RL: DEV (Device component use); USES (Uses)
(components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4



RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6

IC ICM H01M004-66
ICS H01M004-02; H01M004-38; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy

Technology)
ST **secondary** lithium **battery anode**
component manuf; **battery anode** component elec
insulator layer **substrate**
IT Polyamides, uses
Polyimides, uses
RL: DEV (Device component use); USES (Uses)
(arom.; components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)
IT **Battery anodes**
(components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)
IT Polyamides, uses
Polycarbonates, uses
Polyesters, uses
Polyoxyalkylenes, uses
Polyurethanes, uses
RL: DEV (Device component use); USES (Uses)
(components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)
IT **Secondary batteries**
(lithium; components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)
IT 7439-93-2, Lithium, uses 7440-50-8, Copper, uses **9002-88-4**, Polyethylene **9003-07-0**, Polypropylene 25038-59-9, Polyethylene terephthalate, uses 25322-68-3, Polyethylene oxide 236388-76-4, Lithium phosphide sulfide
RL: DEV (Device component use); USES (Uses)
(components of **anodes** contg. elec. insulator layers between **metal substrates** and Li **films** for **secondary** lithium **batteries**)

L88 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:470753 HCAPLUS
DOCUMENT NUMBER: 140:426190
TITLE: Bipolar **battery** and its manufacture
INVENTOR(S): Hosaka, Kenji; Kawai, Mikio; Nemoto, Koichi
PATENT ASSIGNEE(S): Nissan Motor Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 24 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004164898	A2	20040610	JP 2002-326707	200211 11

PRIORITY APPLN. INFO.: JP 2002-326707 200211 11

AB The **battery**, preferably a **secondary** polymer

electrolyte Li **battery**, has a stack of bipolar electrodes, having a cathode and an **anode** on opposite sides of a collector, and an electrolyte between the bipolar electrodes, where the collector is ≤5 μm thick. The **battery** is manufd. by forming cathodes on **substrates**, forming **anodes** on the other **substrates**, prepg. unit cells by placing an electrolyte between a cathode and an **anode**, forming a thin **metal film** collector on the **substrates**, and stacking the unit cells. The **battery** is useful for elec. automobiles.

IT **9002-88-4**, Polyethylene
RL: DEV (Device component use); USES (Uses)
(electrode **substrates**; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)

RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

IC ICM H01M010-40
ICS H01M004-02; H01M004-66
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST elec automobile **secondary** polymer electrolyte bipolar lithium **battery** manuf
IT Electric vehicles
(automobiles; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT Automobiles
(elec.; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT **Secondary batteries**
(lithium; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT 12031-95-7, Lithium titanium oxide (Li4Ti5O12)
RL: DEV (Device component use); USES (Uses)
(**anode**; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT 12057-17-9, Lithium manganese oxide (LiMn2O4)
RL: DEV (Device component use); USES (Uses)
(cathode; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT 7429-90-5, Aluminum, uses 12597-68-1, Stainless steel, uses
RL: DEV (Device component use); USES (Uses)
(collector; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)
IT **9002-88-4**, Polyethylene
RL: DEV (Device component use); USES (Uses)

(electrode **substrates**; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)

IT 9003-11-6, Polyoxyethylene-polyoxypropylene copolymer 132843-44-8
RL: DEV (Device component use); USES (Uses)
(electrolyte; structure and manuf. of **secondary** polymer electrolyte bipolar lithium **batteries** for elec. automobiles)

L88 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:407140 HCAPLUS
DOCUMENT NUMBER: 141:40631
TITLE: Preparation and characterization of thick-**film** Ni/MH **battery**
AUTHOR(S): Do, Jing-Shan; Yu, Sen-Hao; Cheng, Suh-Fen
CORPORATE SOURCE: Department of Chemical Engineering, Tunghai University, Taichung, 40704, Taiwan
SOURCE: Biosensors & Bioelectronics (2004), 20(1), 61-67
CODEN: BBIOE4; ISSN: 0956-5663
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

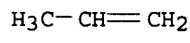
AB Using the porous polypropylene **films** sputtered with gold and the nickel as current collectors, the electroactive materials (Ni(OH)2 and **metal** hydride (MH)) of cathode and **anode** were prepd. on the current collector using thick-**film** technol. Two types of cell configurations were prepd. and the characteristics of these **batteries** were compared. The cycle no. for the formation of **batteries** based on the porous polypropylene **film** was found to be 2, which was significantly less than that of **batteries** based on the ceramic **substrates.** Using the porous polypropylene **film** as **substrate**, the no. of cycles for the formation of **battery** increased from 2 to 5 with the increase of the charge/discharge rate from 0.1C/0.025C to 2.0C/0.5C. The silver oxide dendrites formed by the oxidn. of silver paste used to adhere the current collectors and the conducting wires in the charge/discharge process caused a short contact between the cathode and **anode**, which then caused the **battery** failure. The cycle life of the **battery** based on the porous polypropylene **film** was found to be >400 when the charge/discharge rate was 2.0C/0.5C.

IT **9003-07-0**, Polypropylene
RL: DEV (Device component use); USES (Uses)
(porous; prepn. and characterization of thick-**film** nickel/**metal** hydride **batteries** with current collector **substrate** of)

RN 9003-07-0 HCAPLUS
CN 1-Propene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **metal** hydride nickel **battery** porous

polypropylene **substrate** current collector

IT **Secondary batteries**
(nickel/**metal** hydride; prepn. and characterization of thick-**film** nickel/**metal** hydride **batteries**)

IT **9003-07-0**, Polypropylene
RL: DEV (Device component use); USES (Uses)
(porous; prepn. and characterization of thick-**film** nickel/**metal** hydride **batteries** with current collector **substrate** of)

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:116800 HCAPLUS
DOCUMENT NUMBER: 138:173304
TITLE: Non-sintered cathode, its manufacture, and alkaline **battery** using the cathode
INVENTOR(S): Tamakoshi, Hiromi; Kishimi, Mitsuhiro; Fukunaga, Hiroshi
PATENT ASSIGNEE(S): Hitachi Maxell Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003045420	A2	20030214	JP 2001-229376	200107 30

PRIORITY APPLN. INFO.: JP 2001-229376 200107 30

AB The cathode has a conductive **substrate** and an active mass paste; where the paste contains Ni(OH)2 particles having partial trivalent Ni3+ among its surface, a Na contg. Co oxide **coated** on the Ni(OH)2 particles, and a copolymer of a vinyl acetamide and ≥1 unsatd. ethylene monomer contg. an acrylic acid or its salt. The cathode is prepd. by applying the above paste on the conductive **substrate** made of a porous **metal** , filling, and press molding after drying. The **battery** has the above cathode, a H-absorbing alloy **anode**, a separator, and an electrolyte.

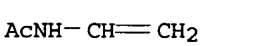
IT **113655-05-3**, Acrylic acid-N-vinyl acetamide copolymer
RL: DEV (Device component use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and acrylic acid-N-vinyl acetamide copolymers for **secondary** alk. **batteries**)

RN 113655-05-3 HCAPLUS
CN 2-Propenoic acid, polymer with N-ethenylacetamide (9CI) (CA INDEX NAME)

CM 1

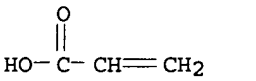
CRN 5202-78-8

CMF C4 H7 N O



CM 2

CRN 79-10-7
CMF C3 H4 O2



IC ICM H01M004-32
ICS H01G009-058; H01M004-26; H01M004-52; H01M010-30
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **secondary** alk **battery** nickel hydroxide cathode structure manuf; cathode vinyl acetamide acrylate unsatd ethylene monomer copolymer
IT **Secondary batteries**
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and acrylic acid-N-vinyl acetamide copolymers for **secondary** alk. **batteries**)
IT **Battery** cathodes
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coatings** and acrylic acid-N-vinyl acetamide copolymers for **secondary** alk. **batteries**)
IT 1312-43-2, Indium oxide 11104-61-3D, Cobalt oxide, sodium contg. 12054-48-7, Nickel hydroxide (Ni(OH)2) 21041-93-0, Cobalt hydroxide (Co(OH)2) **113655-05-3**, Acrylic acid-N-vinyl acetamide copolymer
RL: DEV (Device component use); USES (Uses)
(structure and manuf. of nickel hydroxide cathodes having Na contg. Co oxide **coating** and acrylic acid-N-vinyl acetamide copolymers for **secondary** alk. **batteries**)

L88 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:27749 HCAPLUS
DOCUMENT NUMBER: 136:88414
TITLE: **Secondary** lithium **battery** with separator having polyoxyalkylene-type layer
INVENTOR(S): Ito, Masanori; Nagura, Hideaki; Harada, Yoshiro
PATENT ASSIGNEE(S): F.D.K. Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 2002008730 A2 20020111 JP 2000-193322 200006 27

PRIORITY APPLN. INFO.: JP 2000-193322 200006 27

AB The **battery**, using a cathode contg. Li transition **metal** mixed oxide and an **anode** contg. graphite, is equipped with a separator having an electrolyte-retaining thin layer on a **substrate.** Preferably, the thin layer comprises dispersed inorg. particles, e.g., Al2O3, SiO2. Thus, a separator was manufd. by **coating** a mixt. contg. ethylene glycol acrylate, ethylene glycol Et ether acrylate, and a photopolymn. initiator on a polyethylene sheet and then UV irradiated to give a **battery** showing large discharge capacity.

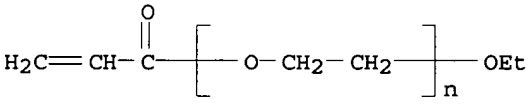
IT **387356-06-1P**
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)

RN 387356-06-1 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-(1-oxo-2-propenyl)-ω-ethoxy-, polymer with α-(1-oxo-2-propenyl)-ω-[(1-oxo-2-propenyl)oxy]poly(oxy-1,2-ethanediyl), graft (9CI) (CA INDEX NAME)

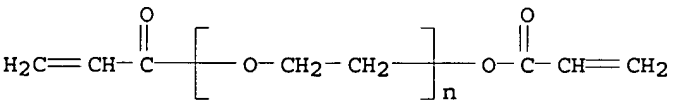
CM 1

CRN 35111-38-7
CMF (C2 H4 O)n C5 H8 O2
CCI PMS



CM 2

CRN 26570-48-9
CMF (C2 H4 O)n C6 H6 O3
CCI PMS



IT **9002-88-4**, Polyethylene
RL: DEV (Device component use); USES (Uses)
(**substrate**; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)

RN 9002-88-4 HCAPLUS

CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4

$H_2C{=}CH_2$

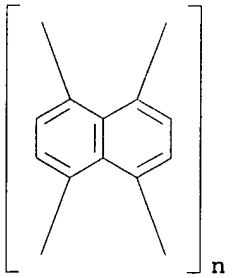
IC ICM H01M010-40
ICS H01M002-16; H01M004-02
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST electrolyte retaining polyoxyalkylene composite separator **secondary** lithium **battery**
IT Polyoxyalkylenes, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acrylic, graft; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT **Secondary batteries**
(lithium; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT **Secondary battery** separators
(separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); USES (Uses)
(**anode**; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
RL: DEV (Device component use); USES (Uses)
(cathode; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
RL: DEV (Device component use); USES (Uses)
(particle; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT **387356-06-1P**
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)
IT **9002-88-4**, Polyethylene
RL: DEV (Device component use); USES (Uses)
(**substrate**; separator having electrolyte-retaining layer contg. dispersed oxide particle in **secondary** lithium **battery**)

L88 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:685275 HCAPLUS
DOCUMENT NUMBER: 136:72212
TITLE: Characterization of polyperinaphthalenic organic semiconductor thin **films** prepared by excimer laser ablation and application to **anode** electrodes for ultrathin rechargeable Li ion **batteries**
AUTHOR(S): Nishio, Satoru; Tamura, Kazuyuki; Tsujine,

Yukari; Fukao, Tomoko; Murata, Jun; Nakano, Masyoshi; Matsuzaki, Akiyoshi; Sato, Hiroyasu; Ando, Nobuo; Hato, Yukinori
CORPORATE SOURCE: Faculty of Engineering, Mie University, Japan
SOURCE: Proceedings of SPIE-The International Society for Optical Engineering (2001), 4274(Laser Applications in Microelectronic and Optoelectronic Manufacturing VI), 266-277
CODEN: PSISDG; ISSN: 0277-786X
PUBLISHER: SPIE-The International Society for Optical Engineering
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Polyperinaphthlenic org. semiconductor (PPNOS) **films** with polyperinaphthalene (PPN) structure for **anode** electrodes for ultra thin rechargeable Li ion **batteries** are prepd. on temp.-controlled **substrates** by excimer laser ablation (ELA) of 3, 4, 9,10-perylenetetracarboxylic dianhydride (PTCDA) or mixt. target of PTCDA with a few **metal** powder (PTCDA/M) using a 308 nm (XeCl) pulsed excimer laser beam. It is demonstrated that ELA of PTCDA at a fluence of less than 0.5 Jcm-2pulse-1 enables us to obtain PPNOS on a **substrate** at 300 degree(s)C. It is found that ELA of PTCDA/Co at a fluence of more than 1.0 Jcm-4pulse-1 leads to produce effectively fragments without anhydride groups of PTCDA. FT-IR and Raman spectroscopies reveal that ELA of PTCDA/Co enables us to obtain better-defined PPN **films** with elec. cond. of approx. 1x10-1 Scm-1 on a **substrate** at 300 degree(s)C. Electrochem. doping characteristics of lithium ion into the **films** obtained by ELA are performed to verify the lithium doping mechanism by in situ Raman spectroscopy. Furthermore a trial piece of thin lithium ion rechargeable **battery** with the **films** is fabricated to appraise performance of the **films** as **anode** thin electrodes for ultra thin rechargeable lithium ion **batteries.**

IT **114239-80-4**, Polyperinaphthalene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(polyperinaphthalenic org. semiconductor thin **films** prepd. by excimer laser ablation as **anodes** for ultrathin rechargeable Li ion **batteries**)

RN 114239-80-4 HCAPLUS
CN Poly(1,8:4,5-naphthalenetetrayl) (9CI) (CA INDEX NAME)



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72

ST polyperinaphthalenic **film anode** rechargeable

lithium **battery**

IT **Secondary batteries**
(lithium; polyperinaphthalenic org. semiconductor thin **films** prepd. by excimer laser ablation as **anodes** for ultrathin rechargeable Li ion **batteries**)

IT **Battery anodes**
Laser ablation
Surface structure
(polyperinaphthalenic org. semiconductor thin **films** prepd. by excimer laser ablation as **anodes** for ultrathin rechargeable Li ion **batteries**)

IT 7440-48-4, Cobalt, uses
RL: DEV (Device component use); USES (Uses)
(polyperinaphthalenic org. semiconductor thin **films** prepd. by excimer laser ablation as **anodes** for ultrathin rechargeable Li ion **batteries**)

IT **114239-80-4**, Polyperinaphthalene
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(polyperinaphthalenic org. semiconductor thin **films** prepd. by excimer laser ablation as **anodes** for ultrathin rechargeable Li ion **batteries**)

REFERENCE COUNT: 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L88 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:49078 HCAPLUS
DOCUMENT NUMBER: 132:95769
TITLE: Sealed **secondary** nickel-hydrogen **batteries**
INVENTOR(S): Kanamoto, Manabu; Kishimoto, Tomonori; Mineji, Toshiyuki; Kurokuzuhara, Minoru; Tanaka, Toshiki
PATENT ASSIGNEE(S): Yuasa Battery Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000021400	A2	20000121	JP 1998-190157	19980706

PRIORITY APPLN. INFO.: JP 1998-190157 19980706

AB The **batteries** contain (A) cathodes comprising sintered Ni powder **substrates** filled with active materials of Ni hydroxide solid solns. contg. group 2A or 2B elements and/or Co and having composite **coating** layers of compds. of Co and/or group 2A or 2B elements, (B) H-absorbing alloy-based **anodes**, (C) alk. electrolyte solns., and (D) separators of nonwoven fabrics placed in cases sealed with covers having safety valves. The **batteries** show good high-rate discharge characteristics and long cycle life.

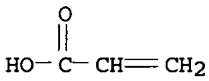
IT **98846-22-1P**, Acrylic acid-ethylene graft copolymer
106400-60-6P, Acrylic acid-propylene graft copolymer

RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(fiber, nonwoven fabric separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

RN 98846-22-1 HCAPLUS
CN 2-Propenoic acid, polymer with ethene, graft (9CI) (CA INDEX NAME)

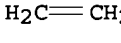
CM 1

CRN 79-10-7
CMF C3 H4 O2



CM 2

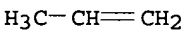
CRN 74-85-1
CMF C2 H4



RN 106400-60-6 HCAPLUS
CN 2-Propenoic acid, polymer with 1-propene, graft (9CI) (CA INDEX NAME)

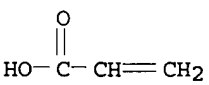
CM 1

CRN 115-07-1
CMF C3 H6



CM 2

CRN 79-10-7
CMF C3 H4 O2



IC ICM H01M004-52
ICS C22C001-00; C22C001-02; H01M002-16; H01M004-32; H01M004-38; H01M010-30
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 40, 56
ST sealed nickel hydrogen **battery** safety; sintered nickel cathode cobalt sealed **battery**; hydrogen absorbing alloy

anode sealed **battery**; nonwoven fabric separator
sealed nickel **battery**; alkali electrolyte sealed nickel **battery**

IT Polyolefin fibers
Polyolefin fibers
Synthetic polymeric fibers, uses
Synthetic polymeric fibers, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acrylic acid-ethylene, graft, nonwoven fabric separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT Polypropene fibers, uses
Polypropene fibers, uses
Synthetic polymeric fibers, uses
Synthetic polymeric fibers, uses
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(acrylic acid-propene, graft, nonwoven fabric separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT Nonwoven fabrics
(bicomponent polyolefin fibers, separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT Polyolefin fibers
RL: DEV (Device component use); USES (Uses)
(bicomponent, nonwoven fabrics, separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT Alkaline earth **metals**
Group IIB elements
RL: DEV (Device component use); USES (Uses)
(in cathodes; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT **Battery anodes**
Battery cathodes
Battery electrolytes
Safety
Secondary battery separators
(sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT **Secondary batteries**
(sealed, nickel-hydrogen; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 1333-74-0, Hydrogen, uses
RL: DEV (Device component use); USES (Uses)
(alloys contg. absorbed, **anodes**; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 255059-41-7
RL: DEV (Device component use); USES (Uses)
(**anodes**; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 11113-74-9P, Nickel hydroxide
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(cathode active material; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT **98846-22-1P**, Acrylic acid-ethylene graft copolymer

106400-60-6P, Acrylic acid-propylene graft copolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(fiber, nonwoven fabric separators; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 7440-48-4, Cobalt, uses
RL: DEV (Device component use); USES (Uses)
(in cathodes; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 1310-58-3, Potassium hydroxide, uses 1310-65-2, Lithium hydroxide 1310-73-2, Sodium hydroxide, uses
RL: DEV (Device component use); USES (Uses)
(in electrolyte solns.; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 12672-51-4P, Cobalt hydroxide 60935-67-3P, Cobalt zinc hydroxide
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

IT 7440-02-0, Nickel, uses
RL: DEV (Device component use); USES (Uses)
(sintered, cathode **substrate**; sealed **secondary** nickel-hydrogen **batteries** with good high-rate discharge characteristics)

L88 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:209054 HCAPLUS
DOCUMENT NUMBER: 130:211747
TITLE: Manufacture of **battery** electrodes and **batteries**
INVENTOR(S): Yamamura, Takashi; Nagai, Yozo; Nishiyama, Soji
PATENT ASSIGNEE(S): Nitto Denko Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11086848	A2	19990330	JP 1997-243280	19970909
PRIORITY APPLN. INFO.:			JP 1997-243280	19970909

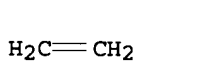
AB The electrodes, having an ion permeable porous polymer surface layer, are prepd. by applying an active lass layer on a conductive **metal substrate**, applying a soln. of a polymer dissolved in a 1st solvent on the active mass layer, contacting the electrode with a 2nd solvent insol. for the polymer but sol. for the 1st solvent to replace the 1st solvent and solidify the polymer, and drying. The polymer soln. may contain dispersed inorg. powders. The **batteries** use these electrodes, and are preferably **secondary** Li **batteries.**

IT **9002-88-4**, Polyethylene
RL: MOA (Modifier or additive use); USES (Uses)

(manuf. of graphite **anodes** with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
RN 9002-88-4 HCAPLUS
CN Ethene, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 74-85-1
CMF C2 H4



IC ICM H01M004-04
ICS H01M004-02; H01M010-40
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST lithium **battery** electrode porous polymer **coating**
IT **Battery** electrodes
(electrodes with with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT Polyvinyl acetals
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of graphite **anodes** with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT 1344-28-1, Alumina, uses
RL: MOA (Modifier or additive use); USES (Uses)
(electrodes with with inorg. powder contg. ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(manuf. of graphite **anodes** with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT **9002-88-4**, Polyethylene 9004-35-7, Cellulose acetate
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of graphite **anodes** with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT 12190-79-3, Cobalt lithium oxide (CoLiO2)
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(manuf. of lithium cobaltate cathodes with ion permeable porous polymer surface layers for **batteries**)
IT 68-12-2, Dmf, uses 7732-18-5, Water, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents in manuf. of graphite **anodes** with ion permeable porous polymer surface layers for **secondary** lithium **batteries**)
IT 67-56-1, Methanol, uses 51831-03-9, Decalene
RL: NUU (Other use, unclassified); USES (Uses)
(solvents in manuf. of lithium cobaltate cathodes with ion permeable porous polymer surface layers for **batteries**)

L88 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:632022 HCAPLUS
DOCUMENT NUMBER: 129:247689

TITLE: **Secondary** nickel-cadmium **battery** having **anode** plate with high strength
INVENTOR(S): Tsutsui, Kenta; Ooneta, Satoshi
PATENT ASSIGNEE(S): Matsushita Electric Industrial Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 3 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10261408	A2	19980929	JP 1997-64057	199703 18

PRIORITY APPLN. INFO.: JP 1997-64057 199703 18

AB In the **battery**, the **anode** plate comprises a punched **metal** plate with thickness 0.05-0.20 mm and punched hole diam. 1-3 mm whose both surfaces are **coated** with a paste of Cd oxide powders contg. 1-3 wt.% org. binder and 0.2-0.6 wt.% synthetic resin fibers having fiber length 1-3 mm and fiber diam. 2-4 denier. Cracking of active mass from the **anode** plate is prevented.

IT **9002-89-5**, Poly(vinyl alcohol)
RL: DEV (Device component use); USES (Uses)
(Ni-Cd **battery** having **anode** plate **coated** with Cd oxide paste contg. synthetic fiber)
RN 9002-89-5 HCAPLUS
CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
CMF C2 H4 O

$H_2C{=}CH{-}OH$

IC ICM H01M004-24
ICS H01M004-62; H01M010-24
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST synthetic fiber nickel cadmium **battery anode**; cracking resistance nickel cadmium **battery anode** ; acrylic fiber nickel cadmium **battery anode**
IT **Battery anodes**
(Ni-Cd **battery** having **anode** plate **coated** with Cd oxide paste contg. synthetic fiber)
IT Acrylic fibers, uses
RL: DEV (Device component use); USES (Uses)
(Ni-Cd **battery** having **anode** plate **coated** with Cd oxide paste contg. synthetic fiber)
IT **9002-89-5**, Poly(vinyl alcohol)
RL: DEV (Device component use); USES (Uses)
(Ni-Cd **battery** having **anode** plate

coated with Cd oxide paste contg. synthetic fiber)
IT 1306-19-0, Cadmium oxide, uses
RL: DEV (Device component use); USES (Uses)
(Ni-Cd **battery** having **anode** plate **coated** with Cd oxide paste contg. synthetic fiber and binder)
IT 7439-89-6, Iron, uses
RL: DEV (Device component use); USES (Uses)
(**substrate**; Ni-Cd **battery** having **anode** plate **coated** with Cd oxide paste contg. synthetic fiber)

L88 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:494693 HCAPLUS
DOCUMENT NUMBER: 125:173344
TITLE: Composite **anode** for **secondary** nonaqueous-electrolyte **batteries** and its manufacture
INVENTOR(S): Mizumoto, Mamoru; Honbo, Hidetoshi; Horiba, Tatsuo
PATENT ASSIGNEE(S): Hitachi, Ltd., Japan
SOURCE: U.S., 7 pp., Cont.-in-part of U.S. Ser. No. 801,102,abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

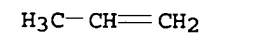
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5541022	A	19960730	US 1994-346218	19941122
JP 06060868	A2	19940304	JP 1992-229454	19920806

PRIORITY APPLN. INFO.: JP 1992-229454 A 19920806
US 1993-80102 B2 19930623

AB The **anode** includes particles of an alkali **metal** alloy, a carbonaceous material powder, and a binder. The carbonaceous material powder contains 1-5 wt.% O. The **anode** is prepd. by mixing a soln. of a binder of a copolymer of monomers mainly composed of olefins in an arom. solvent with the alkali **metal** alloy particles and the carbonaceous material powder, **coating** the mixt. on an electrode **substrate**, and molding the **coated substrate.**
IT **9010-79-1**
RL: MOA (Modifier or additive use); USES (Uses)
(rubber, **battery anode** contg. alkali **metal** alloy and carbonaceous material and binder of)
RN 9010-79-1 HCAPLUS
CN 1-Propene, polymer with ethene (9CI) (CA INDEX NAME)

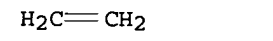
CM 1

CRN 115-07-1
CMF C3 H6



CM 2

CRN 74-85-1
CMF C2 H4



IC ICM H01M004-02
INCL 429218000
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST alkali **metal** alloy carbonaceous material **anode**; **battery anode** composite
IT Rubber, ethylene-propene
RL: MOA (Modifier or additive use); USES (Uses)
(**battery anode** contg. alkali **metal** alloy and carbonaceous material and binder of)
IT Carbonaceous materials
RL: MOA (Modifier or additive use); USES (Uses)
(**battery anode** contg. binder and alkali **metal** alloy and)
IT **Anodes**
(**battery**, contg. alkali **metal** alloy and binder and carbonaceous material)
IT 71849-42-8 71849-43-9 72785-69-4 72785-92-3 95788-08-2 97838-40-9 97838-42-1 101898-65-1 180529-41-3
RL: TEM (Technical or engineered material use); USES (Uses)
(**battery anode** contg. binder and carbonaceous material and)
IT **9010-79-1**
RL: MOA (Modifier or additive use); USES (Uses)
(rubber, **battery anode** contg. alkali **metal** alloy and carbonaceous material and binder of)

L88 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:542901 HCAPLUS
DOCUMENT NUMBER: 119:142901
TITLE: Metalized microporous polypropylene membranes as a support for thin-**film** electrodes
AUTHOR(S): Besenhard, J. O.; Hess, M.; Huslage, J.; Krebber, U.; Jurewicz, K.
CORPORATE SOURCE: Dep. Inorg. Chem., Univ. Muenster, Muenster, W-4400, Germany
SOURCE: Journal of Power Sources (1993), 44(1-3), 493-8
CODEN: JPSODZ; ISSN: 0378-7753
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Microporous polypropylene separator materials, e.g., Celgard 2400, can be metalized by electroless deposition of thin layers of Cu or Ni and subsequent electroplating with any desired **metals.** There is no strong chem. interaction between org. polymers and

metals, and adhesion is mostly due to mech. anchoring of the **metal** layer in cavities of the **substrate.** In the case of microporous separators as **substrate** materials, this anchoring effect is extremely strong and the **metal** layers usually cannot be removed from the **substrates** without destroying them. Since polypropylene is not attacked by common org., acidic, or basic electrolytes, the high flexible shear- and crease-resistant **metal** layers on microporous polypropylene support may be used for various **battery** applications. In particular, filling up the remaining pore structure of single-sided metalized separators with active materials is an attractive route to thin but mech. stable electrodes. Electrochem. properties of rechargeable Li alloy **anodes** based on Cu/Ni-plated Celgard filled with Sn/LixSn are reported.

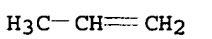
IT **25085-53-4**, Celgard 2400
RL: USES (Uses)
(separators, metalized microporous, for thin-**film** electrodes, for **batteries**)

RN 25085-53-4 HCAPLUS

CN 1-Propene, homopolymer, isotactic (9CI) (CA INDEX NAME)

CM 1

CRN 115-07-1
CMF C3 H6



CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST polypropylene metalized microporous separator electrode; copper electroless plating polypropylene separator; nickel electroless plating polypropylene separator; lithium **anode** metalized polypropylene separator

IT Electric resistance
(of copper **films**, electroless deposited on Celgard surfaces, for **battery** separators)

IT Electric impedance
(of tin-filled Celgard composite electrodes, for **batteries**)

IT **Anodes**
(**battery**, lithium alloys, polypropylene separators for, metalized microporous, tin-filled)

IT Electrodes
(**battery**, polypropylene separators for, metalized microporous, active **metal**-filled)

IT **Batteries, secondary**
(separators, polypropylene, metalized microporous, **metal** -plated, manuf. of, for flexible shear- and crease-resistant thin **films**)

IT Lithium alloy, base
RL: USES (Uses)
(**anodes**, polypropylene separators for, metalized microporous, tin-filled, for **batteries**)

IT 7440-31-5, Tin, uses
RL: USES (Uses)
(polypropylene separators filled with, metalized microporous, for thin-**film** lithium alloy **anodes**, for **batteries**)

IT 7440-02-0, Nickel, uses 7440-50-8, Copper, uses

RL: USES (Uses)
(separators with electroless deposited, polypropylene, microporous, for thin-**film** electrodes, for **batteries**)

IT **25085-53-4**, Celgard 2400
RL: USES (Uses)
(separators, metalized microporous, for thin-**film** electrodes, for **batteries**)

L88 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:258115 HCAPLUS
DOCUMENT NUMBER: 118:258115
TITLE: Sealed **secondary batteries** and their manufacture
INVENTOR(S): Saito, Shinji; Komaki, Akio; Hasuda, Yoshiaki; Akuto, Takaharu
PATENT ASSIGNEE(S): Shin Kobe Electric Machinery, Japan; Nippon Telegraph & Telephone
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 05047368	A2	19930226	JP 1991-29800	19910225
PRIORITY APPLN. INFO.:			JP 1991-29800	19910225

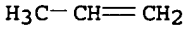
AB The **batteries** have a cathode and an **anode** on the same side of a 1st **substrate film**, an electrolyte filled between the electrodes, and a 2nd **substrate film** covering the electrodes and electrolyte and hot sealed to the 1st **film**. The **metal** terminals of the electrodes are covered successively with an epoxy resin and a chlorinated olefin-maleic anhydride copolymer, and are hot sealed to the **films**. The **batteries** are prepd. by applying a polyolefin, e.g., chlorinated polyolefin, binder to the 1st sheet, adhering the sheet to the copolymer layer of the laminated electrode terminals, applying the epoxy resin and copolymer layers to the other side of the terminals, and hot pressing a 2nd **film** having a polyolefin binder layer to the assembly to seal the terminal. This structure is esp. suitable for lead-acid **batteries**.

IT **25722-45-6D**, Maleic anhydride-propylene copolymer, chlorinated
RL: USES (Uses)
(in sealed lead-acid **battery** manuf. for terminal sealing)

RN 25722-45-6 HCAPLUS
CN 2,5-Furandione, polymer with 1-propene (9CI) (CA INDEX NAME)

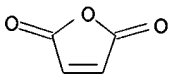
CM 1

CRN 115-07-1
CMF C3 H6



CM 2

CRN 108-31-6
CMF C4 H2 O3



IC ICM H01M002-30
ICS H01M002-04; H01M002-08; H01M010-12
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38
ST lead **battery** sealing polymer; epoxy resin lead **battery** sealing; chlorinated polyolefin lead **battery** sealing
IT Epoxy resins, uses
RL: USES (Uses)
(in sealed lead-acid **battery** manuf. for terminal sealing)
IT **Batteries, secondary**
(sealed, lead-acid, epoxy resin and chlorinated propylene-maleic anhydride copolymers in manuf. of)
IT **25722-45-6D**, Maleic anhydride-propylene copolymer, chlorinated
RL: USES (Uses)
(in sealed lead-acid **battery** manuf. for terminal sealing)

L88 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:534481 HCAPLUS
DOCUMENT NUMBER: 117:134481
TITLE: **Anodes** for **secondary** alkali **metal batteries**
INVENTOR(S): Miyabayashi, Mitsutaka; Hayashi, Manabu
PATENT ASSIGNEE(S): Mitsubishi Petrochemical Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

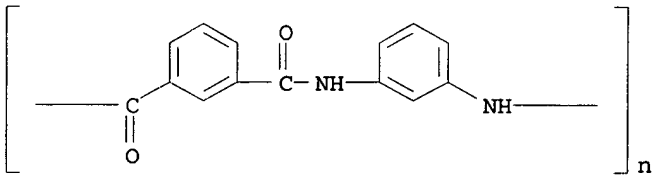
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 04109553	A2	19920410	JP 1990-225121	199008 29
JP 3154714	B2	20010409		
PRIORITY APPLN. INFO.:			JP 1990-225121	199008 29

AB The **anodes** have an alkali **metal** loaded on **substrate** of a carbonaceous material having H/C at. ratio <0.15 and interplanar spacing d002 ≥3.37 Å bonded by a fluoropolymer binder having m.p. or softening point ≥179°. Preferably, the **anodes** have the alkali **metal** at least impregnated or **coated** on part of their surface, and the binder is in fibrous form. Li/MnO2 **batteries** using **anodes** of the invention had high coulombic efficiency.

IT **24938-60-1**
RL: USES (Uses)
(binder, **anodes** with carbonaceous **substrates** contg. fibrous, lithium, for **batteries**)

RN 24938-60-1 HCAPLUS

CN Poly(imino-1,3-phenyleneiminocarbonyl-1,3-phenylenecarbonyl) (9CI) (CA INDEX NAME)



IC ICM H01M004-02
ICS H01M010-40

CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)

ST lithium **battery anode** carbon **substrate** ; fluoropolymer binder lithium carbon **anode**

IT Carbonaceous materials
RL: USES (Uses)
(**anodes** with **substrates** of fibrous fluoropolymer-bonded, lithium, for **batteries**)

IT **Anodes**
(**battery**, lithium, carbonaceous **substrates** with fibrous fluoropolymer binders for)

IT 7439-93-2, Lithium, uses
RL: USES (Uses)
(**anodes**, carbonaceous **substrates** with fibrous fluoropolymer binders for, in **batteries**)

IT **24938-60-1**
RL: USES (Uses)
(binder, **anodes** with carbonaceous **substrates** contg. fibrous, lithium, for **batteries**)

L88 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1977:192464 HCAPLUS

DOCUMENT NUMBER: 86:192464

TITLE: Electrodes for primary or **secondary batteries**

INVENTOR(S): Boter, Pieter Abraham

PATENT ASSIGNEE(S): N. V. Philips' Gloeilampenfabrieken, Neth.

SOURCE: Ger. Offen., 12 pp.
CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2640345	A1	19770324	DE 1976-2640345	19760908
DE 2640345	B2	19800514		
DE 2640345	C3	19810122		
NL 7511044	A	19770322	NL 1975-11044	19750919
SE 7610273	A	19770320	SE 1976-10273	19760916
SE 412668	C	19800626		
JP 52039138	A2	19770326	JP 1976-111284	19760916
JP 58035351	B4	19830802		
GB 1551989	A	19790905	GB 1976-38378	19760916
FR 2325202	A1	19770415	FR 1976-28005	19760917
FR 2325202	B1	19800523		
PRIORITY APPLN. INFO.:			NL 1975-11044 A	19750919

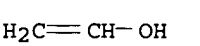
AB The title electrodes comprise a porous **metal substrate** and a sintered, porous layer of an intermetallic compd. which can absorb reversibly H under hydride formation. Pores of the sintered layer are filled with a hydrophilic, H2O-insol. polymer. Thus, a Ni grid was **coated** with a toluene suspension of CuLaNi4 [51312-66-4] and polystyrene, dried at 80°, heated at 250° to remove the binder, impregnated with poly(vinyl alc.) [**9002-89-5**]. It can be used as **anode** in an alk. **secondary battery** with a Ni(OH)2 cathode.

IT **9002-89-5**
RL: USES (Uses)
(**anodes** contg., copper-lanthanum-nickel, alk.-**battery**)

RN 9002-89-5 HCAPLUS
CN Ethenol, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 557-75-5
CMF C2 H4 O



IC H01M004-58
CC 52-2 (**Electrochemical**, Radiational, and Thermal Energy Technology)
ST **battery** copper nickel lanthanum **anode**

IT **Anodes**
(**battery**, copper-lanthanum-nickel, contg. poly(vinyl alc.), alk.-)
IT **9002-89-5**
RL: USES (Uses)
(**anodes** contg., copper-lanthanum-nickel, alk.-**battery**)
IT 51312-66-4
RL: USES (Uses)
(**anodes**, contg. poly(vinyl alc.), alk.-**battery**)

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